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LECTURES

ON THE

THEORY AND PRACTICE OF MIDWIFERY,

DELIVERED AT GUY'S HOSPITAL BY

DR. BLUNDELL.

LECTURE XX.

Management of Floodings in the Latter Months.

THOSE large eruptions of blood, Gentlemen, which are taking place from the uterus during the latter months of pregnancy, I am accustomed to divide into *three* kinds; those, I mean, in which the floodings are connected with the situation or implantation of the placenta, over the mouth of the womb; those floodings, again, in which you have large quantities of blood coming away from the uterus, without the placenta being so situated; and, lastly, those large discharges from the uterine cavities which follow the birth of the fœtus, and either precede, or come after, the abstraction of the placenta. Now, of these three species of floodings, we shall treat in order.

Nature has wisely so ordained it, that, in general, the placenta does not cohere to the mouth and neck of the womb, but is attached either to the body of the uterus, or its fundus. It does, however, occasionally happen, and dangerously both to the mother and the fœtus, that the placenta is implanted over the os uteri, so as either to lie over it completely, or else to give it a partial covering, one half of the os uteri being closed in by the membranes, as the other half is by means of this fleshy mass, the placenta. When the placenta is, in this way, partially implanted over the os uteri, or covering it completely, we find the patient becomes liable to large and dangerous eruptions of blood from the womb; these eruptions taking place, earlier or later, during the latter periods of gestation, but generally, I think, about the seventh or eighth month, and without any obvious cause. The patient, perhaps, is lying asleep in bed, or, it may be, she is quietly occupied with her needle, when suddenly the blood bursts from the uterus, asphyxia speedily following, and sometimes, though rarely, death itself. Sooner or later, with more or less severity, the pains make their beginning; and it is remarkable, that when the pains of parturition ultimately supervene, every effort of the uterus is sometimes accompanied with a gush of blood in varying quantity. Of these hæmorrhages, the reason usually assigned is the following: during the first and middle months, it seems the ovum is confined merely to the body of the womb, the neck forming no part of the general receptacle in which it lodges. The placenta, therefore, placed during these months over the neck of the uterus, lies undisturbed; but during the two or three months, in the end of pregnancy, the cervix uteri gradually dilates itself, so as to form a part of the chamber tenanted by the fœtus; and the consequence is, that the neck of the womb dilating to receive the ovum, while the placenta is not equally expanded, a movement of one surface over the other, slow, indeed, but certain, is produced. Now, in consequence of this movement of surface upon surface, there is a tearing of those vessels, numerous and large, which pass from the uterus to the placenta; the blood, of consequence, rushing from the uterus largely, and without visible cause, the discharge depending on nothing extrinsic, but upon those internal changes which must necessarily take place. Again: when the efforts of parturition come on, the entire ovum is pushed down towards the vagina, as in ordinary labours—the placenta, which lies over the os uteri, of course descending foremost. With every effort of parturition, therefore, the placenta comes forward more and more, and becoming, of consequence, more and more detached from the uterine surface; additional vessels are successively laid open, each disclosure being accompanied with a further discharge of blood. Thus, in these floodings, we have not only, at first, a spontaneous eruption of the blood, but sometimes also a return of the gushes with the pains, both of them symptoms very characteristic of the disease.

Such, then, is a brief summary of the more important symptoms which characterise this disease: the placenta covering the mouth of the womb, partially or completely, large hæmorrhages, dangerous both to the mother and child, are apt to occur; these floodings often arise spontaneously, and without obvious cause, in the latter months; and when the pains supervene, the ovum begins to descend, and, at this time, the gushes of blood, instead of being diminished, are apt to return with every effort. After all, however, these symptoms merely create a suspicion of the real nature of the case. The only certain mode of ascertaining that the placenta covers the disc of the os uteri, is by examination very carefully instituted; and wherever this situation of the placenta is suspected, examination should be had recourse to, as soon as it may be made. Performing this operation carefully, we find a fleshy mass lying over the mouth of the womb, covering it completely or partially; and if we are in the habit of feeling the placenta, (and I would recommend you all, in commencing practice, to acquire a knowledge of its tangible properties, by handling every placenta which may come in your way,) we may readily enough determine on examination, whether that fleshy mass be, or be not, the placenta. If, however, being inexperienced, you suspect that this reputed placenta may, in reality, be nothing more than a clot of blood, taking a small portion of it between your fingers, you had better pluck it away; making an examination of it afterwards by putting it into pure water, when the placentar characteristics may be easily discriminated from those of a clot of blood. In the outset of your practice, take every opportunity of contrasting the one with the other; readiness of discrimination may be of use to you here. To conclude, then. When, in the seventh or eighth months, you find a large discharge of blood occurring spontaneously,—and when, after these large discharges, gushes are found to recur with every pain, you may venture to surmise, from these symptoms, that the placenta is lying over the os uteri; that such is certainly its situation, can be made out by examination only, and the sooner it is instituted the better.

But to proceed, asphyxia not forbidding, if you are called to a case in which the placenta is lying over the mouth of the womb, provided the woman be in a state nearly approaching to asphyxia, and provided, too, as generally happens, the bleeding is arrested, let her lie quiet, forbearing to disturb the genitals by manual operation, for I repeat, if you hastily introduce your hand into the uterus at this time, you perhaps produce a renewal of the discharge, which would most probably destroy the patient.

If again you are called to a case in which, the placenta lying over the os uteri, there is not, however, this great reduction of strength, so that the woman does not lie, as it were, half dead, remember the general rule is, that you should introduce your hand into the uterus as soon as you safely may, and that you should abstract the child by the operation of turning. On this point there can, I presume, be no difference of opinion among competent judges, at least in the present state of knowledge; so that the mind is not here, as sometimes, distracted or disturbed among a variety of practices, all of which may have nearly equal claims to its adoption. Thus, then, lies the general rule: provided you find the placenta lying over the disk of the os uteri, so as to cover it partially or completely, the hand is to be introduced into the uterus, and the child is to be abstracted by turning, without the delay of a moment, *as soon as the operation may be performed with safety.*

Now the hand may be safely introduced, or, at least, it may be introduced with that degree of safety which justifies the operation, provided the softer parts are thoroughly relaxed, which, in these cases, they almost always are, in consequence of the bleeding; provided, further, the os uteri is beginning to open itself a little; becoming, for instance, broad as a half crown, (for the urgency of the danger would justify our not awaiting a wider dilatation,) and provided, lastly, the woman be *not in such a state of asphyxia, that if you disturb the parts, so as to cause the discharge of an additional cupful of blood, dissolution may be expected to ensue.* Under such conditions, therefore, the sooner you operate the better. But, on the other hand, if the os uteri be closed, if the softer parts be rigid, and if the *patient lie in a state approaching to asphyxia,* WAIT. Wait, in the first place, where the patient is in a state approaching to asphyxia, proceeding to the operation when the patient rallies. Again, where there is a rigidity of the softer parts, —of the os uteri, I mean, or vagina,—wait, proceeding to the delivery as soon as the laxity of the parts will allow. In thirty, twenty, nay, sometimes, in ten minutes, or less, a relaxation will sometimes suddenly occur; remain, therefore, with the patient, and let your examinations, though gentle and prudent, be frequent, unless asphyxia forbid. That you ought always to wait, because the disc of the os uteri is smaller than a half-crown piece, I am not sure. When experienced, dexterous, and cautious, you may sometimes dilate and deliver notwithstanding; but keep the fear of laceration always before your eyes, and while young in practice, beware. In the general, I may remark, that you should remain at the bed side; never quitting the patient till she is delivered; be watchful too—be vigilant:

the waves are high and the winds are abroad —while you are sleeping, the bark is sinking. Save, or your patients perish. By turning, it is, that the fœtus is to be abstracted in these cases; and this may be accomplished in different ways. The placenta completely covering the mouth of the uterus, in the first place you may carry your hand through this aperture, at the same time making an opening through the placenta, so as to penetrate both simultaneously, enlarging the opening sufficiently to admit the introduction of the hand into the uterine cavity, where you may lay hold of the child's feet, and bring it away by the operation of turning. Or, again, and this is the second method of operating, passing the os uteri, you may advance the hand between the placenta and the uterus, until, with as little disturbance of the parts as may be, you reach the edge of the placenta, where the cyst, containing the liquor amnii (a cyst of water) may be felt. This point accomplished, you enter the cavity of the ovum by lacerating the membranes, advancing afterwards to the feet of the child, and, as before, abstracting it by turning. Now, like all other things, these two obstetric practices have both their advantages and their evils; for, as it was wisely observed by the ancients, every thing has two handles, though we commonly see but one. If you enter the uterus by rupturing the membranes, I think, on the whole, there may be a fairer change of preserving the fœtus; I say there may be, for of this I am not certain. But, probably, under this mode of procedure, in consequence of the detachment of the placenta, a larger discharge of blood during the operation will occur; while, on the other hand, if you dexterously enter through the os uteri, at the same time perforating the substance of the placenta, you may, perhaps, detach the placenta less extensively from the surface of the uterus, and secure the chance of a smaller discharge of blood, though the laceration of the capillaries of the umbilical vessels, occasioned by the disruption of the placenta, may possibly endanger the child. More experience, however, is wanting in these matters; at present we must, in speaking of them, interject those dubitatives, which form an essential component of most medical opinions. For myself, I make my election between the two modes of performing the operation, upon the following principle:—If, arriving early, I find the patient is not much reduced by bleeding, I do not scruple to enter through the membranes, having, I presume, a fairer chance of saving the child in this manner, and, under the conditions given, not being afraid of the loss of an additional cupful of blood; but, as frequently happens in placentar cases, the woman is so reduced, that the loss of a few additional ounces of blood may sink her, then I prefer entering the cavity of the uterus by penetrating the placenta, because the bleeding may be less, and the security of the woman may be greater; and, in British midwifery, the safety of the mother, in every point, is made paramount to every other consideration whatever.

Here then is, in brief, a statement of those peculiar practices, which these very important and very dangerous flooding cases, of all others the most important and the most dangerous, are requiring. When the placenta is implanted over the os uteri, so as to cover the disc of it partially or completely, the first office of the accoucheur is to ascertain the precise situation of the placenta—certainly known from careful examination only —to be suspected, however, when, in the seventh or eighth month, you find large bleedings without obvious cause, while gushes of blood accompany every effort of the uterus. This point ascertained, the practice to be adopted is the following:—If the woman seem to be at the point of death, and the hæmorrhage be stopped, you must not disturb the genital parts at that time, even by making examination, but, without neglecting other important practices, you must wait till she dies or rallies, operating if she recover herself, provided the bleeding return and require it. If, on the other hand, the patient is not in this sinking condition, without the needless delay of a minute, you are to deliver as soon as you safely may, and you may with that degree of safety which in such emergency justifies an operation, provided there is not a state of asphyxia immediately approaching, and provided the softer parts are tolerably relaxed, and the os uteri is a little open. If there be a rigidity of the softer parts, as sometimes, especially when you are summoned to the case early, by no means leave the patient, even though you may not be able to introduce the hand, but make your examination every five or ten minutes, and introduce your hand as soon as the parts may admit. In performing the operation, if anxious to save every drop of blood, perforate the placenta, afterwards, as you enter the ovum, dilating together the os uteri and the aperture in this viscus; but if the woman be strong, you may then, in general, enter by passing between the womb and ovum to the edge of the placenta, rupturing the membranes and turning the fœtus as before explained. When the woman cannot be delivered there may be an advantage in discharging the liquor. This might sometimes be done by puncturing the placenta, care being taken not to detach it in so doing. When the membranes are felt over the os uteri, the placenta giv-

ing it but a partial covering, the waters, under such circumstances, may be easily discharged. These practices deserve consideration. From a very sensible friend, Mr. Greenwood, of Horsleydown, I first learnt them.

The grand errors which you are likely to commit in cases of this kind, are the following:—You may begin your operations too early, when the softer parts are rigid, and, by forcing up the hand, you may, I conceive, bruise and tear and destroy the patient, though, on the whole, it must be admitted that of this there is not much danger, as in placentar cases the parts are generally relaxed. Again, in these cases you may lose the patient by delaying the delivery too long, for you may wait till the woman is so much reduced, that she dies either before the operation can be performed, or as soon as the fœtus is taken away. By the expectation of pains, you may also be misguided—misled by that *silly* rule which you will recollect I formerly denounced. The placenta lying over the mouth of the womb, you may have pains, it is true, but the floodings may be so copious that the womb becomes, in a great manner, paralysed, and while you are waiting for the pains the patient may die. Violence you may commit in performing the operation—atrocious violence—in obstetrics, the sin which cannot be forgiven. If you are too urgent in forcing the hand into the vagina—if you are too rough in dilating the os uteri,—and this is almost the only case in which it is allowable to dilate the os uteri,—look at these preparations, and mark the effects. The dangers of asphyxia I have already pointed out. Sitting down at the bed side, without the pause of reflection, you may proceed headlong to perform the operation, when the patient is so reduced already, that the loss of two or three ounces more of blood will sink her; and what is the result of this? why, before you have got your hand into the uterine cavity, jactitation, heaving, gasping, and intolerable oppression, may seize on the patient, and, perhaps, before you can deliver the woman, she perishes.

I shall now send you round some demonstrative preparations. The preparation here presented to you illustrates two things: you see, first, the natural situation of the placenta, which coheres to the body of the uterus; secondly, you see the neck of the womb, forming a sort of appendix to the body, as yet not dilated so as to constitute a part of the general receptacle for the ovum. This fœtus is about five months old. The dilatation of the cervix uteri will occasion spontaneous bleeding.

In the next preparation, you may observe the lower part of the uterus, consisting of the neck and mouth; over the os uteri the placenta is placed. That woman was not delivered, because she had no pains; the practitioner was an admirer of the *silly* rule; the consequence was her death, and this preparation. Mr. Randall, a very intelligent practitioner, made me a present of the parts. In the practice which we have reprobated, he had no share.

Here is a preparation in which the os uteri is beginning to open; the neck of the uterus forming a part of the general receptacle for the fœtus. Now it is when the cervix uteri makes its transit from the undilated to the dilated condition, in the seventh or eighth month, that the detachment of the placenta and the bleeding is produced. In the preparation I now show you, you see the ovum with its placenta perforated, and suspended upon a bladder passed through the aperture. These are the secundines of a woman whom I delivered, the placenta lying over the mouth of the uterus; a hole was made through the placenta, and gradually, by dilating simultaneously the os uteri and the placenta, room was obtained for the introduction of the hand.

Of latter Flooding, in which the Placenta is not situated over the mouth of the Womb.

It frequently happens, Gentlemen, in the latter months of pregnancy, that you have large eruptions of blood from the uterus, though the placenta be not implanted over the mouth of the uterus; and this absence of the placenta from the mouth of the uterus is to be ascertained, in the more dubious cases, solely by very careful examination. That the flooding is not occasioned by the situation of the placenta over the mouth of the womb, may be reasonably suspected when the bleeding is not spontaneous, but clearly referrible to some exciting cause, a fright or a fall, for example, though these eruptions may sometimes occur without being preceded by any obvious accident to which they may be attributed. That the flooding is independent of the situation of the placenta over the os uteri may, too, be shown in some cases by the freedom of the patient from those large gushes of blood during the pains, so frequently occurring when the placenta is implanted over the mouth of the womb. These diagnostics, however, are presumptive merely; understand, clearly, that the only certain mode of deciding whether the placenta is or not lying over the mouth of the os uteri, is by careful examination.

Under various forms it is, that these floodings manifest themselves, when the placenta is not deposited upon the mouth of the womb. In the seventh or eighth month, for example, the patient may die suddenly, with symptoms very similar to those of ruptured aneurism; and on laying open the body after death, two or three pints of blood

may be discovered within the cavity of the uterus, and this, too, although there have been no external bleeding. On this variety of flooding, however, I forbear to dwell; it is of rare occurrence, and, in the present condition of knowledge, scarcely admits a remedy.

In the latter months, when the placenta is not lying over the mouth of the womb, floodings of a different kind, more frequent though not common, are found to occur. Perhaps the woman is in strong labour, and the liquor amnii has been discharged, and the head of the child is descended into the cavity of the pelvis, and a sudden eruption of blood takes place in the middle of the labour. In cases of this kind, if the discharge is NOT very abundant, and the head of the fœtus is not advancing with unusual tardiness, the less you interfere the better. Puzos, a practitioner of Paris, used (as I am informed) to recommend the urging forward of the pains by making pressure on the os uteri, perinæum, and back of the vagina, which, as he imagined, had the effect of stimulating the uterus and of multiplying the efforts. Of this practice I have had but small experience; contusions would be the result of a rough administration of it. If it really possess the power imputed, and effectively accelerate the birth of the fœtus, it would, with due gentleness and caution, be well worth a trial in the more copious floodings of this kind; but, after all, I incline to think that other practices may be more advantageously adopted, with a view of stimulating the efforts of the uterus; and of these it is my design to treat at large hereafter, when on the subject of lingering labour. The ergot appears to be especially indicated. If, again, in the middle of the labour the bleeding takes place, and that too in quantity which is dangerous; should the head be above the brim, you must introduce the hand, and bring the fœtus away by the operation of turning; but should the head be below the brim of the pelvis, you may introduce a lever, or a pair of forceps, abstracting the fœtus in that manner. So that the practice here is very simple; so long as the discharge is not dangerous, it is unnecessary to interfere actively with your manual practice, but if the discharge is so abundant that life seems to be thereby endangered, unless, as before explained, asphyxia forbid, manual operations become necessary; if the head of the child be below the brim, the lever or forceps may be used; if it be above the brim of the pelvis, the hand must be introduced into the uterus, and the child must be abstracted by the operation of turning, already considered at large; the evacuation of the uterus in these cases being the only effectual mode of putting a stop to the discharge.

But to proceed to the next variety: If engaged in a large consultation practice, as it is called sometimes, and, indeed, not uncommonly, you will meet with flooding cases where the placenta is not placed over the mouth of the womb, and where the labour, perhaps, is not as yet begun, the patient being attacked with copious bleeding, at a time when the membranes are unbroken, and when the os uteri is wholly or in great measure closed. Now in cases of this kind, if the discharge be unattended with danger, you need not actively or manually interfere. Let the patient lie a-bed—let her be kept cool and quiet; if there be a slight fainting, let it be encouraged; and refrigerants may be of use; and turpentine and lead may be given; and cold may be applied topically; in a word, to check the bleeding, you may have recourse to all the various practices already recommended, and as yet, I trust, not wholly forgotten. If, however, as not infrequently happens in those bleedings, you are alarmed for the safety of the patient, you may then be justified in having recourse to manual practices; and if, then, the placenta is not upon the mouth of the uterus, and if the liquor have not as yet been discharged, then it seems to be agreed that the preference is to be given to that beautiful operation, which consists merely in the rupturing of the membranes, and the discharge of the liquor amnii. For this purpose, the hæmorrhage continuing, pass a finger or two to the membranes, then take a female sound, (if bluntly pointed, all the better,) and, carrying this through the membranes, tear them a little, so as to discharge the water. Rigby, who first recommended the practice in this country, and I who has all the merit of originality, tells us, I think, that in as many as 60 cases, he found this operation sufficient to arrest the discharge, or, at all events, to diminish it so much, as to secure the patient from danger. Merriman, in his very excellent Synopsis on Midwifery, states, that in nearly thirty cases of uterine bleeding in the after months, he found this operation alone sufficient effectually to check the discharge. Now the danger of the cases considered, this success is splendid. Nor have I in my own practice found reason to doubt the efficacy of the remedy. Your practice, therefore, lies here within a very narrow compass, easily administered, efficaciously operative. The placenta not lying over the mouth of the womb, and the os uteri being shut, provided the discharge be not very large and dangerous, you do not interfere with the membranes, but wait, at least for a time, to see whether the bleeding will not cease of itself; but if the discharge continues, so that you are alarmed for the safety of your patient, even then you ought not, without reflection, to thrust your hand into the uterus; for, in general, it is sufficient

merely to rupture the membranes; an operation, than which none in midwifery is more easy, and in this way discharging the fluid of the ovum, you more or less completely arrest the discharge. The operation is beautiful—simple, as it is effectual.

The placenta not lying over the os uteri, it now and then happens, that, notwithstanding the discharge of the liquor amnii, the flooding still continues. Now, in cases of this kind, provided the patient's life appear to be in danger, the only remaining resource is, to bring away the child by the operation of turning; for of the remaining means for arresting the bleeding, the most powerful is the thorough evacuation of the uterus. If the softer parts are rigid, if the os uteri is shut and unyielding, if the patient is in a state approaching to asphyxia, so that it is necessary to wait till she rally, you must refrain from interfering; remain in the house—abide in the bed-chamber; be patient—be vigilant; and when your patient has rallied somewhat, make an examination, to know whether the hand can yet be introduced with safety; and if from the laxity of the softer parts, and the dilatation of the uterine mouth, it seem evident that turning may be safely executed, let the hand without delay be carried into the cavity of the uterus, for the sooner the fœtus is abstracted the better.

The following are the principal errors which you are apt to commit in the management of those floodings in which the placenta is not lying over the mouth of the uterus, and they well deserve a little consideration. The neglecting to ascertain whether the placenta is, or not, lying over the mouth of the womb, is a capital fault, for your whole practice must turn upon that knowledge; if the placenta is lying over the mouth of the womb, one kind of practice becomes proper; if it is not so situated, another. The trusting too much to medicinal treatment, to the exclusion of manual interference, is another great error in the management of the latter floodings. In the general, as I have observed on preceding occasions, the best accoucheurs are those who interfere the least with the fingers or hand; but if there be an exception to that rule, that exception lies in the management of these flooding cases of the latter months, where, owing to the danger arising from the large discharges of blood, practices prompt and efficacious are peremptorily required. Denman, a cautious and experienced practitioner, remarks, I think, somewhere, that if we are to err in those cases, we ought rather to err on the side of promptitude than procrastination; adding, if I remember right, that it is rather a sign of wisdom than of officiousness, to show a readiness in these cases to discharge the liquor, or to deliver by the hand. Again: if you have not seen much of flooding cases, you are liable to be alarmed at the quantity of blood that is discharged, being induced, of consequence, to carry your hand into the uterus, when, perhaps, it would have been a better practice to have confided the suppression of the bleeding to the rupture of the membranes, an operation at once safer and more easy. Further, the delivery of patients in a hurry is a great error; it is more than an error, it is a crime. Into this crime, in unguarded hour, you may be seduced, if you have delayed too long the delivery, when really required; anxious to save your reputation and your patient, you accelerate, you bruise, you tear, you destroy. I now repeat what I observed once before: in obstetrics, a thrust of the hand into the uterus may prove as fatal, and will generally produce a more extensive wound, than the thrust of a bayonet. The waiting for pains is an error which you may commit; on this I dwelt in a preceding lecture. You have not forgotten the silly rule; where there are large floodings, the womb may be paralysed; nor should you, therefore, if symptoms require it, be deterred from manual interference, merely because the pains are wanting. The absence of pains, if it proves anything, rather proves the necessity of obstetric assistance, because it proves that the natural efforts are inadequate to the expulsion of the fœtus.

LECTURES ON CHEMISTRY,

BY

PROFESSOR BRANDE.

Delivered at the Royal Institution of Great Britain.

Lecture XXX.

On the Chloride, Nitrate, Sulphate, Phosphate, and Carbonate of Lime.

At the conclusion of the former lecture, I briefly explained the formation of the *chloride of calcium*, which, I stated, was produced by heating *lime* with chlorine, by which process its oxygen is evolved, and the chlorine unites with the metallic base of the lime, (calcium,) to form chloride of calcium, and I gave you my reasons for considering this compound as distinct from muriate of lime.

Chloride of Lime, or, *Oxymuriate of Lime.*—Now, if lime be exposed to chlorine at a *common* temperature, the chlorine is absorbed as in the former case, but no oxygen is given out, so that, in fact, you have a *true chloride* of the *earth lime*, and not a chlo-

ride of calcium. *Chlorine* is, as you are aware, a very powerful bleaching agent; but, as a gas, it is very inconvenient for transportation, and difficult in its application; but here the chlorine is held in combination with the lime, and the affinity by which it is held is so slight, that it has the power of acting upon vegetable colours as if entirely free. So weak is the affinity by which it is united to the lime, that by mere exposure to the carbonic acid gas of the atmosphere the chlorine is evolved, and acts as a very powerful bleaching agent. When water is added to the chloride of lime, it effects its partial decomposition; one half of the chlorine leaves the lime, and dissolves in the water; and this is the *bleaching liquid* of the shops, which is sold at a high rate, although it cannot cost more than a farthing a gallon. Sometimes this fluid is applied immediately to the substance to be bleached, but sometimes a weak acid is added to destroy the slight affinity of the chlorine for the lime, and you will see by this addition, how much the bleaching power of the fluid is increased. The manufactory of the chloride of lime is carried on on a large scale in the north of England, by passing chlorine into leaden chambers containing hydrate of lime in fine powder. So weak is the affinity which exists between the lime and the chlorine, that, in the vessels used by the bleachers, carbonate of lime is generally precipitated.

The *chlorate of lime* is a salt of very little importance; it is very soluble in water, very deliquescent, and of a sharp bitterish taste. It is easily produced by dissolving carbonate of lime in chloric acid. Oxygen is evolved when it is exposed to heat, and the salt is then reduced to a chloride.

The *nitrate of lime* is constituted of nitric acid and lime; it is very soluble in water, dissolving in less than half its weight of water; and, by the addition of a solution of carbonate of potash to the solution of the nitrate of lime, a sufficient quantity of the carbonate of lime is thrown down to make the whole a solid; and this was called by the alchymists a chemical miracle. It is sometimes found in old plaster and mortar, from the washings of which, by the addition of carbonate of potash, nitre is procured; and I have already spoken of the production of this salt in the artificial nitre-beds.

Then there are the *sulphuret*, the *sulphite*, and the *hyposulphite* of lime; but I do not enter into detail of the properties of these salts, because they are of little interest. In the second number of the *Edinburgh Journal of Science*, edited by Dr. Brewster, there is a very good paper by Mr. Herschel on these subjects, to whom we are indebted for our correct knowledge of these salts.

The *sulphate of lime* is a compound of great importance in its application in the arts; it is composed, in its dry state, of one proportional of lime 28, and one of sulphuric acid 40, forming 68 as its equivalent number. In the crystalline form, the state in which it commonly occurs in nature, it contains two proportionals of water, which it will be necessary to remember, in considering the action of heat upon this salt. Now, when you heat the crystallised salt, you drive off a quantity of the water of crystallisation, and it becomes opaque and pulverulent; and, in this state, it is known as the *plaster of Paris*. If you again mix this with water into the consistence of cream, it *sets*, as it is called, into a hard mass, and is employed in taking casts, and in the manufacture of certain cements, as the Roman cement, and so forth. It dissolves sparingly in water; one part requiring 330 parts of water for the solution of the crystallised salt. It imparts to the water a bitter taste; and you find that it renders water very hard; so that if you endeavour to wash your hands in water containing any notable quantity of the salt, the soap adheres to the hands, and a very disagreeable compound is produced, which sticks to the skin; this is owing to the decomposition of the soap by the lime. When I say that it renders water hard, I am only speaking generally of the water in and about London; all the superficial springs in and about London afford water of this kind, good enough to drink, but not well fitted for washing. If you go deeper, you come to very pure water, containing scarcely any lime, but a little carbonated alkali. The tests of this substance are of course those which indicate the presence of sulphuric acid and lime, and although it may be rather premature to go into this subject at present, I shall show you the manner of operating on water which you suspect to contain sulphate of lime, with one or two of these tests. If we add a little muriate of baryta to the water, we shall get an indication of the presence of sulphuric acid by the precipitation of a dense white insoluble powder, which is the sulphate of baryta. Then there is the oxalate of ammonia as a test for the lime; the oxalic acid combines with the lime, for which it has a strong affinity, and an oxalate of lime is formed, which is also insoluble. The well-digger's test of the purity of water is a good one; he uses a solution of soap to try the quality of the water obtained at different depths. A solution of soap in spirit of wine, if dropped into distilled water, leaves no precipitate; but if the water contain sulphate of lime, it will occasion a white flocculent adhesive precipitate. Some of the springs about London give you almost a saturated solution of the sulphate of lime; such water is very harsh and disagreeable

to the taste, is very unhealthy, probably, and very unfit for washing, or for pharmaceutical or manufacturing processes.

Sulphate of lime is decomposed by the carbonated alkalies, so that if you boil it with carbonate of potash, you obtain a sulphate of potash and a carbonate of lime. In its crystalline form, called *selenite*, and lamellated, called *gypsum*, it is found in the blue clay about London. The crystals are rhomboidal, and I believe that the rhomboidal prism is the primitive form. Here is a specimen of the *anhydrous* sulphate, containing no water of crystallisation, and is a rare mineral; and the Florentine artists are in the habit of using it occasionally for small works of sculpture. Whenever the crystallised salt is heated, it crumbles down, and is then called plaster of Paris. All the varieties of gypsum, alabaster, and so forth, are only coloured varieties of the sulphate of lime.

When *phosphorus* and quick lime are heated together, a dark chocolate-coloured substance is obtained, which is *phosphuret of lime*; it is probable, however, that what is called a phosphuret of lime, is, in fact, a phosphuret of calcium. When thrown into water, phosphureted hydrogen gas is evolved, phosphorous and hypo-phosphorous acids are formed, and phosphite and hypo-phosphite of lime left in solution in the water; but these have not been particularly examined. The best mode of making this compound, is to put the phosphorus into an earthen-ware tube of about eighteen inches in length, and an inch in diameter; the phosphorus should be put into the bottom of the tube, which may then be filled up with pieces of clean quick-lime, which should be broken into small pieces. The tube should then be put into a furnace in the inclined position, so that the end containing the phosphorus may protrude; while the upper part of the tube is heating to redness, draw the tube slowly into the fire, by which the phosphorus will be volatilised, and by combining with the red hot lime, will convert a portion of it into phosphuret. The tube should be coated with clay, and, after the process, should be carefully corked until cool, when the brown pieces are to be selected and kept in well stopped bottles. The stench produced by pouring phosphuret of lime into the holes by which the water is turned on in the streets of London, was caused by the decomposition of the phosphuret, which trick was played off by some of the persons who are adverse to the introduction of gas lights, thus trying to make people believe that the stench issued from the gas; but it was a very foolish and expensive trick, by whomsoever it was played off.

The *phosphates of lime* are four or five in number, but that which consists of one proportional of lime, and one proportional of acid, constitutes the hardening ingredient of bone, and is the substance resorted to for the production of phosphoric acid. Phosphate of lime exists native, constituting a mineral, of which there is a very great variety, to which various names have been given. My opinion, however, is, that chemical nomenclature should be applied as far as possible, to mineralogical compounds, as they are found in Nature; whereas a number of confusing names have been applied to them, depending upon their colour, shape, and other properties; and lately, mineralogists have taken it into their heads to call minerals after the names of different persons, than which nothing can be more absurd; thus they have Thomsonite, Jacksonite, Childrenite, and a half hundred of others. Here is a specimen of the native crystallised variety, of singular beauty, from Devonshire; here another from Cornwall. Here is a specimen of the *asparagus* stone, or green native phosphate, from Bohemia. Here is a specimen from Spain, which, when heated, exhibits a beautiful green light.

This brings us to the *carbonates of lime*, a very important class of bodies, so important, that it is embarrassing to condense their chemical history into the necessary limits. The carbonate of lime may be procured by presenting a solution of carbonic acid to a solution of lime, and I shall show you this mode of forming it. Now, in the first place, if we get carbonic acid and lime-water together, the carbonic acid readily combines with the lime, and converts it into a carbonate of lime, and you have carbonate of lime, or chalk, precipitated: this is the direct formation of it. If you take a solution of carbonic acid, and add to it a solution of lime, you obtain a similar result; but, you will observe, that if you add an excess of acid, this precipitation disappears, the carbonate of lime being again dissolved by the excess of acid, and a considerable quantity of carbonate of lime may be taken up in this way. This experiment, then, will explain to you why it is that many springs contain a large quantity of carbonate of lime, which is held in solution in the water by excess of carbonic acid, and why the water deposits the carbonate of lime as the carbonic acid escapes; such are called petrifying springs, and baskets, and other things, immersed in the water of the spring, become coated with the carbonate of lime, as is especially the case at Matlock, in Derbyshire, where the carbonate forms fine *stalactites*, admitting of a beautiful polish. The pipes used for the conveyance of water are sometimes coated with such a quantity of the carbonate, that the wood of the pipe might be removed, and its continuity preserved, by the incrusted carbonate. (Specimens of this kind were shown.) These are

so many instances of the solution of carbonate of lime in excess of acid, and of the manner in which it is deposited. You have seen that when we precipitate a salt of lime by carbonic acid, we obtain a carbonate of lime; but as it exists in such abundance in nature, we never have recourse to artificial means for its production. Now, with regard to the natural forms of this substance; you have it massive or foliated, in different forms of marble; you have it in the form of stalactite, or stalagmite; you have it in different kinds of marl, and in several clays: and when you recollect that chalk is nearly a pure carbonate of lime, being mixed only with a little argillaceous earth; and when you also recollect, that there are large mountains of lime-stone, which is also a carbonate of lime, you will see what immense quantities of this substance there are in nature.

It becomes our business now to establish the composition of carbonate of lime; and it is composed of 28 parts of lime and 22 of carbonic acid; consequently, it consists of one proportional of lime and one of carbonic acid, and its equivalent number is 50. It dissolves, as you have already seen, with effervescence in the acids, and thus furnishes us with no bad means of determining the strength of the acid employed, with which it always forms saturating compounds. If you take a piece of marble and weigh it, and pour on it diluted muriatic acid, you can ascertain the strength of the acid, by ascertaining how much of the carbonate of lime the acid will take up. *Lime-stone* is a substance of great importance in the arts; it gives us quick-lime when burnt, and the base of many cements, forming a mortar when mixed with sand, which has the property of gradually concreting until it becomes as hard as stone. It is also of great use in agriculture, to say nothing of its ornamental applications, which are very numerous. The fact is, that lime is one of the most important manures which we possess; and although I cannot at present enter upon the nature of its action, I may give you a general notion of its use by saying, that quick-lime has the power of acting on animal and vegetable substances, so as to render them soluble in water, and it is in this way that the different vegetable and animal substances are rendered fit for the nourishment of plants, the lime itself becoming inert and forming a valuable part of the soil. The lime, therefore, ought to be applied to the soil, or mixed with the other manure, as quickly as possible after it comes from the kiln; and, hence, the great impropriety of leaving heaps of it about fields, as you often see done, by which it loses its activity and usefulness; but this will be entered into more by and by, when considering the action of lime upon vegetable and animal bodies.

Boracic acid combines with lime, and forms a mineral called *boracite*, of no great importance. Our time will not allow us today to conclude the subject of lime, by considering the compounds which it forms with *fluoric acid*, as I intended to have done. I shall, therefore, defer it until the next lecture, and conclude the present by mentioning to you some of the *means* by which the presence of lime *may be detected*. Here is a solution of lime in muriatic acid, a solution, in fact, of chloride of calcium. Now one of the readiest tests of the presence of lime is oxalate of ammonia, or oxalic acid, which, when added to a solution of lime, occasions in it a white precipitate, which is oxalate of lime; and if this precipitate be collected and heated, the oxalic acid, being a vegetable product, is easily destroyed by the heat, and you have the lime left in a pure state. When you want to know the quantity of lime in any solution, precipitate it by oxalic acid, heat the precipitate red hot in a platinum cup, and you obtain the quantity of lime in the liquid. One of the characteristics of lime is, that its salts are not precipitable by caustic or pure ammonia, but, if you add the carbonate of ammonia, then you get a carbonate of lime. Now it often happens, that lime is held in solution by substances which are precipitable by ammonia, and if you then use the carbonates of potash or soda you will obtain a carbonate of lime. With regard to the insoluble salts of lime, they are decomposed by the action of carbonate of potash and heat, and a carbonate of lime will be formed which may be precipitated from its solution by pure potash. Pure ammonia does not precipitate the salts of lime from their solution—pure soda and potash do. A great many other tests of lime may be resorted to, but there are none more effectual.

The nature of *fluor spar*, and the other compounds of lime with fluoric acid, will be considered in the next lecture.

FOREIGN DEPARTMENT.

Experiments on the Electricity of the Blood, the Urine, and the Bile of Animals, in a healthy and diseased state. By F. Bellingeri.*

The following are the conclusions to which this physician has arrived.

1st. That venous blood in oxen, sheep

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and the greater number of birds, preserves, under almost every circumstance which accompanies health, a degree of electricity, equivalent, if not superior, to that which is proper to iron.

2nd. That in the same species of animals, age diminishes, in a small degree, the proper electricity of venous blood.

3rd. That the different seasons of the year, and different conditions of the atmospheric air, exercise but little influence in changing the electricity of the blood.

4th. That it is very probable that venous blood always preserves the same quantity of electricity in the healthy state, since the electricity of other liquids, viz., urine, bile, and perspiration, is frequently found to change.

5th. That in those cases where inflammatory diseases supervene, the quantity of electricity of venous blood, in a given species of animals, is susceptible of sensible diminution.

6th. That the venous blood of horses does not contain quite so much electricity as the venous blood of calves, oxen, lambs, and birds, and that the electricity of the venous blood of horses nearly resembles that of antimony.

7th. That the electricity of venous blood is generally rather superior, sometimes equal, but never inferior, to the electricity of arterial blood.

8th. That arterial blood is frequently a bad conductor of electricity.

9th. That venous and arterial blood, in the healthy state, after it has been taken away some time, and even when its constituent principles, serum and cruor, are already separated, preserves, nevertheless, the same quantity of electricity as it possessed when it passed from the vessels.

10th. That the electricity of venous blood, in cases of inflammatory disease, is balanced by the electricity of water and air, even when the elements of the blood, serum and coagulum, are separated from each other.

On the other hand, M. Bellingeri draws the following conclusions, as regards the electricity of urine and bile:—

1st. That the electricity of these liquids, even in the healthy state, is not constantly the same; that it varies very often, and only accidentally corresponds to the electricity of water and air.

2nd. That these liquids, and more especially bile, are bad conductors of electricity.

3rd. That bile, in general, contains more electricity in adult, than in young subjects.

4th. That urine and bile, when kept for some time, preserve the same quantity of electricity which they possessed when evacuated from the body.

5th. That the electricity of urine is capable of increase by putrefaction.

ROYAL INSTITUTE OF FRANCE.*

M. Dumeril read a report, on a paper of M. Chabrier, which treats of the mechanism of the wing of birds in flying.—After having detailed his theory, he endeavoured to show, that the pectoralis major not only acts on the wings and bones of the arm, but that, on the contrary, its principal action is exerted on the sternum, and consequently on the trunk, which thus finds support on the humerus and atmosphere, resembling the manner in which the fish finds a support on the water, which it strikes with its tail. According to M. Chabrier, a bird only brings into action its pectoralis major, either at the moment of its ascent or descent. M. Chabrier then detailed the different solid parts (bones and muscles) which are destined to assist in flight, as well as their principal modifications, such as the length, the breadth of the sternum, and especially its crest; the situation and form of the fork-like bone, the length, size of the bone of the arms, of those of the fore-arm, the arrangement of the feathers, as well as the modification of the pectoralis major and minor, together with the arrangement of the tail, the feathers which surround it, and the use of this part in flight: every thing which is stated above agrees with what was before known.

M. Chabrier attributes the particular junction of the ribs with the bony appendices of the sternum, which correspond to the cartilages, to the action of the pectoralis major on the sternum—an action so quick and violent, that, without this arrangement, the mechanism of respiration would be much more difficult; the ribs of birds, properly so called, being fixed to the dorsal vertebræ, which are joined to each other, or are, at least, immoveable in this region of the spine.

In the last part, M. Chabrier concludes, that the wings of birds only serve in flight to furnish a support on the air, and that, when they appear to be falling, it is most frequently the body which is rising; and reciprocally, that when the wings appear to be elevated, it is the body which is depressed.

M. H. Cassini read a report, both in his own name and that of MM. Desfontaines and Mirbel, on a paper of M. A. Brogniart, which treated of the spermatic granules of vegetables. The structure of the vegetable ovum, before the appearance of the embryo, or during its existence, was for a long time in great obscurity. It is only within a few years that MM. Mirbel, Turpin, Trevira-

* Revue Medicale, Janvier, 1828.

nus, Dutrochet, and still more recently, Brown, have examined with great care the structure of this organ. The direct experiments by which it has been attempted to prove the necessity of fecundation for the formation of the embryo, are, either by isolating the sexes, or by irregular fecundations, which leave very little doubt on this subject. Some physiologists, on the contrary, preserve it, to show the kind of influence of the pollen in fecundation. M. Brown endeavours to prove the existence of generation, not by the result of experiments, which always leave some doubt, but by positive facts which the eye may follow; that is, by studying the structure of the different organs which assist in generation, and by examining successively all the phenomena which accompany and follow fecundation. It is by these means that M. Brown has endeavoured to establish the part which the spermatic bundles, contained in the grains of the pollen, perform in the act of fecundation, and the necessity of their assistance for the formation of the vegetable embryo. It is by means of the excellent microscope of D'Amici, that he has obtained results which confirm his theory, and that he has seen the grains of the pollen filled with granules, different in size, opacity, and perhaps in form and motion. The granules penetrate into the tissue of the stigma; from thence, becoming mixed with a copious fluid, secreted only at the time of fecundation, are carried across the interstices to the point of the placenta, which corresponds to the ovula.

From these facts, it is evident that the vegetable embryo does not pre-exist before fecundation, and that the spermatic fluid is not limited to its vivification; the theory of the union of the germs is then as little fixed in the vegetable as the animal kingdom. It appears equally certain, says M. Brogniart, that one of the spermatic granules does not alone form the embryo, and that, consequently, this embryo does not exist quite formed in the fecundating fluid. Generation does not consist then, uniformly, in sending it to the male in order to be developed. The assistance of the parts formed by the male organ (the spermatic granule) and of the parts formed by the female organ (the vesicle of the embryo, and the mucous granules), for the formation of the embryo, does not appear, on the contrary, to be well proved, and the theory of epigenisis is thus found to agree better than any other, with the different facts, not only in the animal, but also in the vegetable kingdom.

LONDON MEDICAL SOCIETY.

February 18, 1828.

Dr. Haslam, President, in the Chair.

Mr. Amesbury introduced to the notice of the Society, the following interesting particulars of a case of non-union of the femur, recently treated at St. Thomas's Hospital. It will be observed, from the subjoined report, that three different methods were ineffectually pursued in this case; first, the use of the ingenious apparatus of Mr. Amesbury, by which pressure and rest were fully obtained; secondly, the introduction of a seton; thirdly, the operation of cutting down upon the fracture, and destroying an artificial joint which had formed. The whole of these means, it will be remarked, were unsuccessful: so that, at length, amputation was resorted to. The case was given as follows:—

Malcolm M'Lean, a strong healthy sailor, ætat. 36, was admitted into St. Thomas's Hospital, March 11th, 1827, under the care of Mr. Green, having a very loose oblique fracture of the upper part of the middle third of the thigh, which had existed twenty-four weeks. The injury was occasioned by a fall upon deck, from a height of about sixty feet, and the back soon became much swollen and very painful. There being no medical man on board, ten days elapsed after the occurrence of the accident, before any surgical assistance could be procured. At the end of this time, the ship arrived at a port in Monte Video, where he was received into one of the Portuguese Hospitals. During the time he was in that Hospital, nothing was employed to support the limb but short splints, extending from the pelvis to the knee. These proved very inadequate, motion and displacement being produced almost as readily as if the case had been left to nature; the pain and swelling, however, gradually subsided. Ten weeks after the accident, when he removed from the Hospital, to return to England, there was no pain, and very little tumefaction in the limb, but they were re-produced, in a slighter degree, by his exertion to get to the ship, which he accomplished, with the assistance of crutches, the limb being surrounded with short splints as before.

On the 19th of March, twenty-five weeks after the accident occurred, and a week after the man's admission into the Hospital, Mr. Green transferred the management of the case to Mr. Amesbury. Upon attentively examining the limb, the fracture was discovered extending obliquely downward and outward, through the upper part of the mid-

dle third of the bone. The fractured ends were very loosely connected, so that they could be freely moved in all directions. The upper portion was bent upon the pelvis, and the lower portion was retracted, upwards of two inches and a half along the inner side of the upper. By gentle extension, the limb could be brought to nearly its natural length, but the moment the extending force was discontinued, the displacement again returned. Thus, the extent of motion which the fractured ends had upon each other, in the longitudinal direction, was about two inches and a half. The fractured part felt somewhat tender, when firmly pressed with the fingers, but scarcely any pain was produced by freely rubbing together the broken extremities. The lower portion could be carried out of a natural line, with the upper end almost bent upon it, without producing any inconvenience calculated to give rise to complaint on the part of the patient.

1. *Treatment by Pressure and Rest.*—As Mr. Amesbury had not had a case of non-union of the thigh so loose, he remarked, that he was unable to say how far the plan of treatment which he had found successful in other cases, would prove beneficial in this. He doubted whether an "artificial capsule," containing a fluid resembling synovia, had not formed. It was, at length, determined to apply the apparatus which Mr. Amesbury has invented for simple fractures of the middle and lower thirds of the thigh, for simple and compound fractures of the leg, and simple and compound dislocations of the ancle, in such a manner as to *retain the limb of its proper length, and to press the fractured surfaces strongly together.*

The apparatus had the effect of producing pain in the fracture in a few hours after it was applied. The pain increased, and became very severe on the third day, accompanied with startings of the limb: the pain, however, though severe, was not of a description to produce any marked effect upon the system. On the fourth day the uneasiness had much subsided, and the straps were now tightened, which had the effect of increasing the pain in the fracture, but it soon became moderate. He wore the apparatus for about ten weeks, suffering more or less pain in the fracture during the whole period, with the exception of two or three days; but, notwithstanding the existence of the symptoms which precede union (pain and tenderness in the fracture) were much more severe than in any former case Mr. Amesbury had witnessed, the only apparent benefit derived, was a closer confinement of the fractured ends, by the adhesion of the soft parts around them.

2. *Introduction of the Seton.*—The plan of treatment, by pressure and rest, having failed in producing union, it became matter of consideration, what should next be done in order to effect it. Mr. Green concurred with Mr. Amesbury in the opinion, that the probable cause of failure, was the existence of an artificial capsule, containing a fluid resembling synovia, and that it would be advisable to destroy its integrity by the introduction of a seton, which would, at the same time, have the effect of exciting a high action between the ends of the bone, and in the neighbouring soft parts. This operation was determined upon as the most simple of those likely to be advantageous, when had recourse to, in conjunction with means calculated to support the fractured ends in apposition and at rest.

The man was placed upon one of the fracture-beds, and the thigh extended to its proper length, where it was confined in the bent position. He was brought to the edge of the bed, with the limb extended over the middle and lower planes of the bedstead as before, and, while in this position, Mr. Green passed a long curved seton needle, armed with silk, through the thigh, directing it between the fractured extremities of the bone. The needle was introduced at the outer and back part of the thigh, and brought out anteriorly without difficulty. The needle being removed, the ends of the silk were left hanging, and were covered with only a piece of simple dressing. The man was now shifted back to the middle of the bed, without suffering any retraction of the limb to take place, and, when confined in that situation, by fixing the foot and the pelvis, a splint was applied along the outer side of the limb, and secured in such a manner as to keep the fractured surfaces gently together, without pressing upon the soft parts surrounding the fracture.

On the following day, the limb was rather swollen round the seton, and the pulse had increased in frequency: free suppuration took place in the course of two or three days, and the constitutional disturbance became rather severe. The openings soon discharged a large quantity of pus daily; and this being continued for some time, had a manifest effect in reducing the system.

About a fortnight after the introduction of the seton, it was observed that the matter began to burrow beneath the fascia, presenting itself at the upper and inner part of the thigh. This affected his constitution still more; so much, indeed, was the man's health disturbed, that it was not deemed safe to allow the seton to remain in any longer, and it was accordingly removed on the nineteenth day. It had produced great thickening of the soft parts surrounding the fracture, such, Mr. Amesbury observed, as has been often mistaken for callus; and when the fractured ends were pressed together strongly, he experienced severe pain

in the part. The matter was daily evacuated from the upper part of the thigh, where it lay very deep; and it was found that the contents of the abscess gradually diminished in quantity, and ultimately disappeared through the openings made by the seton needle.

After the seton was withdrawn, the constitution soon began to rally, under the influence of tonic medicines and a generous diet, so that the man was sufficiently recovered, in the course of a few days, to feel himself able to take the common food of the hospital. Great care was taken to keep the fractured surfaces in close apposition and at rest, during the suppurative process; but, as it was necessary, for some time, to move the splints daily, in order to evacuate the matter which had burrowed along the outer side of the limb, for about two inches beneath the vastus externus, as well as that which had collected on the inner side, so that the parts could not be kept in that perfect state of quietude, which it was desirable at this time to maintain; the matter could not be evacuated, without producing motion of the fractured extremities of the bone.

At the expiration of about five weeks from the time the seton was introduced, the discharge from the wounds had ceased, but there still remained considerable tenderness in the fracture, and thickening of the surrounding parts. Three additional splints were now applied, and the whole secured round the limb, as the patient laid upon the fracture bed, care being taken to press the fractured surfaces strongly together, and to maintain them in tight apposition and at rest. These splints were thus continued upon the limb for a month; and, at the expiration of this period, being nine weeks from the time the seton was introduced, they were removed, and the limb examined, but no ossific union had taken place. The limb was rendered stiffer by the thickening of the soft parts, and this was the only difference that the seton had produced.

3. *The operation of cutting down upon the ends of the Bone.*—The man was removed to a common bed, and sometime afterwards it was determined, in consultation, to cut down upon the fractured ends, with a view to ascertain, if possible, the cause which still prevented the process of bony union, and then to act in that manner which, upon exposing the ends of the bone, might appear most advisable. The man was again placed upon the fracture-bed, with the limbs in the bent position, in order to secure to the operator a perfect command over the muscles of the thigh. A semicircular incision was made by Mr. Green, commencing at about the middle of the rectus, and then carried round through the belly of the vastus externus. The flap was dissected back, and the fractured end of the upper portion of the bone was brought into view. Upon clearing away the muscles, it was seen that the two broken extremities of the bone were connected by a thick dense capsule, resembling the capsule of the hip-joint, the inner surfaces of which were perfectly smooth and shining. The integrity of this capsule was destroyed, by removing a portion of it from the upper fragment; but, in consequence of the difficulty which was experienced in getting at the fractured end of the lower portion, (which, as has been said, lay on the inner side of the upper,) it was left, covered with the ligamentous matter. In removing about half an inch of the fractured end of the upper fragment, by means of Hey's saw in order to gain room, it was found that the bone had become soft and spongy at this part, apparently from interstitial absorption. From the manner in which the ends of the bone lay, it was evident that the lower portion could not be cleared of the ligamentous deposit which covered it, without enlarging the wound in the soft parts, a proceeding which, in the opinion of Mr. Green and some other surgeons, appeared objectionable.

Two or three small vessels were secured, and the cut surfaces were suffered to fall together, where they were lightly confined by a couple of adhesive straps, and a poultice was then applied over the wound. The pelvis was confined by the strap attached to the upper plane of the fracture bedstead, (upon which he was placed previous to the operation,) and the foot was secured to the foot-board. The thigh was left free from splints and bandages, being preserved of its proper length and at rest.

The man did not suffer much from the operation, except when the finger was passed into the artificial capsule between the oblique surfaces of the fractured ends, which was done in order to ascertain its extent. The capsule possessed a high degree of sensibility, so much, indeed, that when the finger was passed into it, the man could not help crying out. He said, that the pain produced by the incision through the integuments and muscles, was nothing compared to that which he experienced when the *inner surface* of the capsule was pressed with the finger. He was a considerable time under the operation, and felt chilly when it was over, but soon recovered his natural heat.

He passed a good night, and was so free from constitutional disturbance, that he was ordered full diet on the day after the operation. The limb became moderately swollen at the seat of incision, and suppuration was established on the third day. The greater part of the cut surfaces adhered, however, so that there was only a small opening at the upper and outer part of the wound for the

matter to escape. Some of the pus burrowed towards the upper and inner part of the thigh, where an abscess formed, and made its way to the surface, producing some, but not severe, excitement of the system. The matter was evacuated by two punctures made within a few days of each other, and the man's health soon became good. On the tenth day a splint was padded and applied along the outer side of the limb, with a view of producing absorption of the ligament, which covered the fractured surfaces, by forcing them together; but this was done in such a manner as not to press upon the wound, which could easily be dressed without moving the splint. There was much tenderness in the fracture for the first month after the operation, especially where even the slightest motion was given to the limb.

Seven weeks after the operation, the splint was removed, and the limb examined. No union of the bone had taken place. The punctures made for the evacuation of the matter of the abscess had now healed; but there was still remaining a considerable portion of the wound over the fracture.

Thinking it possible that the splint cloth, which had been placed round the limb over the splint, had not been sufficiently powerful in its action to produce absorption of the ligamentous matter, which covered the ends of the bone, a splint was applied on the inner side of the limb, extending the knee to within a very short distance of the fracture; and the outer splint being applied as before, the limb was surrounded by the web of a tourniquet, which passed over the splints immediately below the fracture. By pursuing this plan, the ends of the bone were very strongly forced together, by turning the screw of the tourniquet. These means did not, however, produce any material excitement on the fracture. There was pain occasionally, but it was only slight and transient.

The action of the tourniquet was kept up as powerfully as the man could bear it for a fortnight, making nine weeks from the time of the operation. It was then removed, and, on examining the limb, it was found that no good whatever had resulted from the operation, or the treatment by which it was followed.

The limb was perfectly useless; and, seeing that all endeavours to bring about union of the bone had failed, the poor fellow was now desirous of losing it, which was accordingly agreed to.

The operation was performed on Friday, Feb. 15, in a very masterly manner, by Mr. Green. The bone was taken off immediately above the artificial joint, and about half an inch below the trochanter minor.

Examination of the Bone.—At the time of the operation, which was performed with a view to remove the artificial capsule, a piece of the fractured end of the upper portion was removed, and it was observed that the bone was soft and spongy, apparently from interstitial absorption. This, however, was not the case higher up; where the bone was sawed off in amputating, it was found perfectly healthy. Though the integrity of the artificial joint had been destroyed, it was now again complete. The greater part of it was nearly the thickness of the capsule of the hip joint, but, at the upper part, it was thin, like the capsule of the shoulder. The capsule was accidentally torn at this part, with the finger, and the inner side was seen smooth, and had very much the appearance of synovial membrane, being moist and shining. The ends of the bone were rounded, and, where they came in contact, they were flattened and covered with a dense fibrous structure, very similar in appearance to the intervertebral substance, when divided horizontally, but especially that part of it which is found half way between the centre and circumference.

In a few remarks, with which Mr. Amesbury followed up the case, he especially dwelt upon the circumstance of the man being in good health, a fact in perfect accordance with what he had observed in forty-five cases of non-union that had fallen under his care. The want of union in all these cases, he thought was attributable to the inadequacy of the means employed, in order to keep the fractured extremities in apposition and at rest, although the plans adopted were various. In the case under consideration, an artificial joint had formed in the short space of six months, which he considered as corroborative of the opinion, that, where the fracture is very loose, and the powers of the constitution strong, artificial capsules form much sooner than where the ends of the bone are so connected, as to allow of but slight motion.

The case of M'Lean, with another of seven months standing, Mr. Amesbury said, were the only instances in which he had failed to procure union, by means of perfect rest, with pressure, under the use of his own apparatus; but, although it had failed in effecting a bony union in these two cases, it produced symptoms more severe, but similar in kind to those which preceded the uniting process, in all the successful instances. Eighteen cases of non-union have been successfully treated by Mr. Amesbury, with most of which the fracture had existed above six months: one was of nine months standing, one ten, one eleven, and two, fourteen months. None of the cases were under treatment more than ten weeks, and some not more than a month.

In contending for the superiority of his plan of treatment, whilst he admitted that

an instance of failure might now and then occur, Mr. Amesbury argued upon its advantages, by contrasting it with the twenty-four cases he had seen otherwise treated, in only one of which was union effected. In cases like that under consideration, a *very loose fracture* of long standing, he considered it would be better after having unsuccessfully tried the plan of pressure and rest, to cut down upon the fractured ends of the bone, and remove with the knife, any ligamentous matter with which they might be covered, and then to wash the ends of the bone with some stimulating fluid calculated to produce inflammation, or to destroy the connecting medium by caustic, and then have recourse to the assistance of mechanical support. A similar treatment had been proposed in the case of M'Lean, in lieu of sawing off the ends of the bone; but Mr. Green (to whom Mr. Amesbury paid a high compliment for his liberality) was fearful that it would be productive of dangerous constitutional disturbance.

The discussion which followed was brief, as a large portion of the time of the society had been occupied in the reading of the case, and the observations. Dr. Clutterbuck objected to the expression "*artificial* capsule," considering the phrase "preternatural capsule" as more applicable. Dr. Calso objected to the use of caustic, with a view of producing inflammation in the bone, arguing, that, under such a condition, the bone was not disposed to unite.

Mr. Lloyd said, that he did not regard the ordinary methods of treating fractures of the thigh, with *short splints*, to be so objectionable as Mr. Amesbury had stated. He (Mr. Lloyd) had treated a large number of cases at St. Bartholomew's Hospital, according to this plan, and perfect union, *without deformity*, had been the invariable result.

February 25, 1828.

Mr. Amesbury this evening entered into a long dissertation on fractures of the thigh, illustrating his opinions by reference to various drawings. After speaking of the different kinds of fracture in reference to direction, Mr. A. proceeded to the consideration of the plans of treatment employed in these accidents. The use of short splints to the thigh, placing the foot on the heel, with a pillow under the ham, was condemned, on the ground of its total inadequacy to prevent motion in the lower part of the bone. The position, usually called Pott's, was charged with the same defect; and, in addition, it was affirmed that the foot usually becomes everted under this treatment. The practice of Boyer, with the long splint, was opposed, on the principle of the force being exerted in a straight line, whereas the femur has a considerable curvature forwards. The double inclined plane, now ordinarily employed, was said to be objectionable, in consequence of its allowing the body to gravitate downwards in the bed, and thus the upper part of the femur is tilted forward.

The whole of these defects, Mr. Amesbury contended, are obviated under the use of his apparatus, of which, we presume, it is unnecessary to enter into a full description, it having been for some time before the public, and probably is well known to our readers.

The debate which ensued was brief. Mr. Callaway, whilst he bore testimony to the ingenuity of the apparatus, and admitted its great utility in some cases, at the same time considered Mr. Amesbury was somewhat too sweeping in his denunciation of all other methods of treatment. Non-union, Mr. Callaway said, is a rare circumstance, amidst the many thousand cases treated annually in the hospitals, showing that the treatment there employed, although differing much from that of Mr. Amesbury, is adequate to the cure of the accident.

Mr. Briant spoke of numerous cases of fracture of the thigh, which had fallen under his observation, successfully treated under the use of short splints. Some questions were put to Mr. Amesbury, with respect to the essential difference between his apparatus and the common double inclined plane, and this terminated the business of the Society.

WESTMINSTER MEDICAL SOCIETY.

Saturday, February 23, 1828.

Mr. Mayo, in the Chair.

Dr. Barry, (with reference to the preceding discussion on diabetes,) in a manly and candid explanation, proved, to the satisfaction of the Society, that a slight error as to dates, of which he had been unconsciously guilty, and which had been since corrected by a letter from the patient, reconciled the apparent contradictions between himself and Dr. Ayre, and fully acquitted patient and all of every thing like intentional incorrectness in their respective statements of the case.

Dr. Barry then submitted to the consideration of the Society some peculiar pathological views, and a particular mode of treatment of typhus fever, contained in a lecture delivered and published by his friend, Dr. W. R. Clanny, of Sunderland, to whose talents he paid a well-merited tribute of praise. The first were derived from re-

peated analyses of the blood in health, and in all the stages of typhus. It was stated, that on the 6th day of the disease, albumen, which, in health, forms 121 parts in 1000 of healthy blood, is reduced to 98, and on the 12th to 75. That fibrin, under similar circumstances, is reduced from 28 to 1000, to 25 and 22 successively; and that both these important constituents are found gradually to increase after the 12th day, when the case terminates favourably, but not otherwise. Free carbonic acid, which is always present in healthy blood, is not found in that of the typhus patient after the sixth day. The treatment, which is said by Dr. Clanny to be uniformly successful, consists in the administration of carbonic acid gas, *per os et per anum*, in large and repeated doses.

Dr. Barry concluded by observing, that the ancients chiefly looked to the functional in symptomatic characters of disease; that the moderns added the anatomical, and that we were likely to see a period when the chemical characters would also be considered of importance. He said, that in the present state of our knowledge, we are authorised to conclude, that an altered state of the fluids precedes all the functional derangement, and organic lesions exhibited by those who labour under, or perish, by typhus fever.

Dr. COPLAND was opposed to these views, and considered the nervous system as the first affected.

Dr. GREGORY never knew any practical good result from talking about carbon and hydrogen, and these kind of things.

Dr. REES and Dr. SIGMOND spoke at great length, partly *pro* and partly *con*, but chiefly in support of Dr. Barry's views.

Dr. A. T. THOMSON spoke in favour of Dr. Clanny's chemical pathology.

The PRESIDENT said something about cold affusion, and attempted to throw *cold water* on the subject of discussion, but failed, and received rather a sharp hit from Dr. Barry.

The discussion, towards its close, became so interesting, that two Gentlemen volunteered, at the same moment, to bring forward, at the next sitting, "The Pathology and Treatment of Fever generally." Of these, Dr. J. Copland's offer was announced from the Chair as accepted.

MEDICO-CHIRURGICAL SOCIETY,

February 26.

BENJAMIN TRAVERS, Esq. in the Chair.

A paper by Mr. Brodie, on the immediate effects of injuries of the brain, was read to the Society by Dr. Seymour.

After the reading of the paper was concluded, a considerable pause ensued before any member rose.

Mr. HAWKINS observed, that the paper of Mr. Brodie was so comprehensive, that it afforded little room for discussion; but there was one point mentioned, to which he would call the attention of the members, for the purpose of ascertaining whether their experience on the subject coincided with his own. It had been stated, that the loss of sensation and voluntary motion consequent on injury of the brain, was opposite to the side on which the injury was received; now he would ask, whether, from extravasation of blood at the base of the skull, there might not be pressure on the nerves (for instance, the portio dura and 5th pair) of the side on which the extravasation occurred, in which case the motions of the lid and muscles of the face of the same side would be impaired? It had been said, that the bleeding from the external ear in injuries of the head, probably arose from rupture of the lateral sinuses; but he would ask, whether it might not sometimes occur from a mere laceration of the membrana tympani? because, if it did, a knowledge of this fact would lead to an important practical distinction in the prognosis of the complaint?

Mr. EARLE would ask Mr. Hawkins, whether he ever observed laceration of the membrane of the tympanum without fracture of the petrous portion of the temporal bone? He had, among many cases which had come under his notice, never observed the one unaccompanied by the other.

Mr. HAWKINS said, that he had frequently seen bleeding from the external meatus, in cases where, from the arterial character of the blood, he was certain it could not have arisen from the lateral sinus, and which, in his opinion, could only have arisen from laceration of the membrana tympani.

On referring to the paper of Mr. Brodie, it was found that cases of partial paralysis on the same side as the injury, were alluded to; in fact, there was a case similar to the one which Mr. Hawkins supposed, mentioned by Mr. Brodie.

Mr. HAWKINS was sorry that the case should have escaped his attention.

Mr. EARLE said, that he had observed, in injuries of the head, a train of symptoms which had not been alluded to by Mr. Brodie. He had sometimes seen, in cases where the locomotive powers were destroyed, a kind of convulsive twitching of the muscles of the affected part. Very recently, in a case which was under his care at St. Bartholomew's, of injury of the head, there was *complete paralysis* of one side; but, on being pinched, the patient experienced *sensation*, and there was frequent twitching, or convulsive action, of the muscles of the

leg and arm. On examination after death, extravasation of blood, fracture, and other injuries, were discovered.

Dr. JOHNSON observed, that in affections of the head, not arising from local injury, the symptoms mentioned by Mr. Earle were far from being unfrequent; in simple apoplexy he had frequently observed them. Within the last three days, he was called to a gentleman attacked with apoplexy; for twenty-four hours after the attack, there was loss of sensation and motion; but, from the expiration of that time to his death, there were those convulsive motions of the muscles, to which Mr. Earle had alluded, without any other marked return of muscular power.

The Society then adjourned.

THE LANCET.

London, Saturday, February 29, 1828.

WE believe there is not an unprejudiced man in or out of the profession, who, after a careful perusal of the case of ROLFE v. STANLEY, and a dispassionate consideration of the circumstances connected with that case, to which we called the attention of our readers in our last Number, is not convinced of two things; first, that the case proved on the part of the plaintiff, fully justified the jury in returning a verdict against Mr. STANLEY; and, secondly, that the combined testimony of the six Hospital Surgeons, by which an attempt was apparently made to screen Mr. STANLEY from the consequences of his unskilfulness, was, by reason of the interested character of the witnesses, justly regarded by the jury as unworthy of influencing their verdict. As to the effect produced by this trial on the minds of the public, it is decidedly favourable to the great body of the profession. It is calculated to raise the great mass of English surgeons, absurdly denominated general practitioners, in public estimation, and, by withdrawing the veil from the corrupt system under which they have hitherto been degraded and depressed, to prepare the way for their complete restoration to independence and respectability. It is not true, as has been stated in one of the journals supported by the Bat faction, that we have taken advantage of a case, affording a solitary instance of want of skill in a hospital functionary, to hold up the whole body of Hospital Surgeons to public contempt. Our opinion of Hospital Surgeons is not founded upon the case of ROLFE v. STANLEY; but the case of ROLFE v. STANLEY afforded an obvious illustration of the opinions we have uniformly held and maintained in this Journal, as to the capabilities of Hospital Surgeons. What was the language of THE LANCET in December last?

"Sir Astley Cooper, on one occasion, publicly declared, that there was not a hospital surgeon at St. Thomas's and at Guy's, who was not either his nephew, or his niece's husband, or connected with him more or less closely by ties pecuniary or domestic. What are the consequences of a system which is thus unblushingly admitted to be founded in corruption? Our hospital surgeons are not only inferior to men holding similar situations in other countries, but they are below par, in point of professional information, as compared with practitioners at home. Some of them are the laughing-stocks of their assembled pupils; some few of them acquire considerable dexterity in the performance of particular operations; but we repeat, that as a body, they are below par in point of professional information, and know less of pathology, less of the nature and treatment of disease, than the mass of general practitioners."—*Lancet*, Dec. 15.

At the time this passage was written, we had never heard of the case in which the "excellent anatomist," Mr. Stanley, mistook a foreign body at the distance of an inch from a man's *entire* patella, for a portion of that patella; and this case is, in fact, only one among a number of similar instances, which are only less strikingly illustrative of the truth of our observations, because they have not been made the subject of judicial investigation. We have no wish to press more severely upon Mr. STANLEY, than truth and justice demand at the hands of independent medical journal-

ists; but when his injudicious defenders talk of the compassion which is due to his situation, they forget that some compassion is also due to his patient, and some respect to the interests of the public. One of our contemporaries, whose obscurity shall not, on this occasion, protect him from our animadversion, has been silly and base enough to declare, that a medical journalist ought not, in commenting on Mr. STANLEY's situation, to be influenced by any other feeling, except that of a desire to screen an individual engaged in the same craft with himself. This is precisely the language which used to be held by the "Hole and Corner" surgeons of St. Thomas's Hospital. A surgeon destroys a patient, for example, by mistaking the artery on which he should place a ligature, or by performing the operation for lithotomy, when there is no stone in his bladder. Well! exclaim the Bats, suppose he does? These accidents will, no doubt, happen; and, we admit—candid creatures!—that, when they do occur, they are extremely distressing TO THE SURGEON! But would you aggravate the distress, which a surgeon never fails to feel when he destroys or maims a patient, by giving publicity to his failure, or seeking, if you are the sufferer from his ignorance, and have the good fortune to be only maimed, to recover damages in a court of justice? RODERICK MACLEOD has, in the same spirit, favoured the readers of the Excrescence with a defence of Mr. Stanley, wherein great indignation is expressed at the state of the law, which subjects a hospital surgeon to an action for damages, merely on account of his having mistaken the nature of an injury in the knee of a tailor! "The tailor is alive and well, and can bend his knee," says this judicious apologist for Mr. Stanley. Is it not intolerable, then, that a hospital surgeon should be subjected to a vexatious suit, merely for having mistaken a piece of flint, at the distance of one inch from his patient's *entire* patella, for a portion of that patella? True it was, that the defendant suffered the most excruciating agony, in consequence of this mistake, during a period of eleven months; but, then, he was only a tailor, while Mr. Stanley is a hospital surgeon. "The tailor is alive and well;" what more could a tailor expect? He was subjected to eleven months of unnecessary suffering; what less could he expect from the skill and attention of a hospital surgeon?

We were about to observe, that we had never met with anything parallel, in point of reasoning and good taste, to that part of our contemporary's defence of Mr. Stanley, which is founded upon the circumstance of the sufferer from the surgeon's unskilfulness, being merely a tradesman; but it occurs to us, that there was a passage in the speech delivered by Mr. Huskisson the other night, on Lord John Russell's motion for the repeal of the Corporation and Test Acts, which may serve as a *pendant* for RODERICK MACLEOD's vindication of Mr. Stanley. Mr. Huskisson sneered at the policy of relieving the consciences of dissenting excisemen, while the first Duke in the realm continued subject to civil disabilities, on account of his religion. The reasoning of the Colonial Secretary may be regarded as an extension of the principle assumed by Roderick Macleod. Roderick professes a rational and humane contempt for the bodily suffering of tradesmen, as compared with those of persons in the higher grades of society. Mr. Huskisson's argument advances a step further; for, it goes to the denial of a principle, which we are commonly taught to consider indisputable, namely, the equality of men's souls. Why, says the Doctor, should a hospital surgeon be persecuted for maiming, or maltreating a tailor? Why, says the Statesman, when a Duke's religious scruples are not respected, should the legislature demean itself, by making provisions for the salvation of an exciseman?

The Morbid Anatomy of the Brain. By ALEXANDER MONRO, M.D. F.R.S.E., Professor of Anatomy and Surgery in the University of Edinburgh. 8vo., pp. 183. Vol I. Hydrocephalus. Edinburgh, Maclachlan and Co. 1827.

THE author of this volume has already given ample evidence of his zeal and industry in the cause of medical science. His work on the Morbid Anatomy of the alimentary canal, and the admirable collection of the preparations of morbid parts with which he has enriched the Museum of the Edinburgh University, are sufficient grounds for the work which is now before us claiming the attention of his professional brethren. The present volume contains an account of the pathology and treatment of hydrocephalus; and our author proposes to dedicate a subsequent volume to the history of apoplexy, epilepsy, and mania, and to the effects of injuries of the head.

Before proceeding to the subject of hydrocephalus, he has offered some useful remarks on the importance of the study of morbid anatomy, with a view to the accurate knowledge of physic and surgery, and has represented it as "one of the primary foundations of all medical science." Without an intimate acquaintance with the morbid changes that take place in the human frame, as the causes or the effects of disease, Dr. Monro has stated his conviction, that the practice of physic and surgery can be directed only by ill founded hypothesis or blind empiricism.

The work is divided into two Parts. The first contains some general remarks on the effusion of a fluid within the head; on the physical and chemical nature of that fluid, on its different seats, and on the concomitant organic derangements. These various and important subjects constitute the basis of his subsequent reasonings as to the origin, prognosis, and method of treating hydrocephalus.

In the Second Part, the author has considered the various forms of hydrocephalus, their symptoms, prognosis, and method of treatment. It is not our intention to give any detailed analysis of the facts and reasonings contained in this work; we shall rest satisfied with merely having pointed it out to the attention of those who are engaged in the study of the pathology of the human brain, and to the profession at large, as containing all the more important facts, of which we are now in possession, relating to hydrocephalus.

The following observations are original and interesting, on the natural consistence of the brain:—

"The most favourable opportunity which can be presented for gaining an exact knowledge of the state of the brain of a healthy person, is that which is supplied by the examination of the brain of a criminal, who had forfeited his life to the violated laws of his country, when in the prime of life and health."

Several such favourable opportunities have presented themselves to Dr. Monro, and the following is the account of the appearances he has witnessed:—

"The brain, when in a very recent state, is of a purplish brown colour, and somewhat elastic; it is firm to the touch, and may be divided into thin slices, without any part of it adhering to the knife, and may be stretched to a certain degree without tearing. But when the brain has been exposed to the air for an hour, or an hour and a half, or when examined after the lapse of twenty-four or thirty hours after death, even although death has not been occasioned by disorders which affect the nervous system, the brain is soft, readily torn, and a portion of it adheres to the knife, unless the knife has been previously dipped in oil or water, and it falls to pieces on being slightly stretched."

The consistence of the brain of all criminals is not uniform. In the case of a pirate which a few years ago attracted much notice, and who was a young, stout, and active man, the brain was softer than usual, though it was examined only two hours after death.

The result of his investigations, as to the consistence of the brain of those who have

died from hydrocephalus, is that, generally, it is neither harder nor softer than in the healthy state. Dr. Monro's observations on this point are, however, at variance with those we have had occasion to make, in the examination of a large number of cases of acute hydrocephalus, where the fornix thalami, &c., were sometimes so soft, as to be almost reduced to a pulp.

Dr. Monro does not conceive that inflammation invariably precedes effusion into the brain, as water has been often found in the ventricles, where no symptom of inflammation had preceded death; and it has often been discovered in the fœtal brain, where no increased vascularity was perceptible in the cerebral mass, or its membranes.

From the cases which have come under his notice, he has also been led to infer, that effusion, to a considerable extent, may take place within the head, and be accompanied too with organic disease of the brain, and yet no symptom during life be present, to mark the existence of such a condition.

Dr. Monro has not overlooked the deranged state of the digestive system, and the treatment to be pursued in the early stages of hydrocephalus. With the observations of Dr. Scoutetten, of Metz, on the sympathy between the pia mater and mucous membrane of the intestines, he is disposed fully to coincide.

According to his observations, all the parts of the alimentary canal do not sympathise to the same extent with the coverings of the brain. He supposes, that there is a greater share of sympathy between the stomach and smaller intestines and the brain, than between the great intestines and the brain. He has also stated, that when the mucous membrane of the stomach, or small intestines, is inflamed, the vessels of the pia mater are distended with blood, so as to form red patches, whi h is sometimes followed by extravasation; and he supposes, that this view of the subject is calculated to explain many of the phenomena of apoplexy. Thus, from the violent excitement of the stomach being communicated to the brain, there is an increased determination of blood to that organ, and thus the blood-vessels are gradually weakened, and thereby more apt to be ruptured.

EXTIRPATION OF THE WOMB, BY DR. BLUNDELL.

We have, this week, to record the performance of one of the boldest measures in surgery—the COMPLETE EXTIRPATION OF THE UTERUS, *per vaginam*. This formidable operation was accomplished by Dr. BLUNDELL, on Tuesday, the 19th instant, in the presence of Dr. ELLIOTSON, Messrs. KEY, MORGAN, and CALLAWAY; the patient, a woman upwards of forty years of age, was affected with cancerous disease of the womb: she bore the operation (necessarily tedious and painful) with great fortitude—not more than six or eight ounces of blood were lost, and no ligature was applied.

On the eighth day after the operation, the date of this notice, the woman is, in every respect, doing well, very little constitutional irritation having supervened.

METHODS OF ASCERTAINING THE PURITY OF THE SULPHATE OF QUININE.

In the present number of the *Annals of Philosophy*, there is an interesting and valuable communication from Mr. Richard Phillips, on the means of ascertaining the purity of the sulphate of quinine. In consequence of the great consumption of, and demand for, this invaluable medicine, it has attained a high price, hence it has been adulterated in various ways, by those who do not hesitate to sacrifice the health and lives of their fellow-creatures, at the shrine of cupidity.

After remarking that pure sulphate of quina has the form of minute fibrous crys-

tals, is inodorous, has a bitter taste, and that if starch and sugar be mechanically mixed with it, they may possibly be detected, by inspecting the preparation with a glass. Mr. Phillips makes the following statements:—

"Pure sulphate of quina has the form of minute fibrous crystals, it is inodorous, and its taste is bitter. If certain vegetable products, such as starch or sugar, be mechanically mixed with it, they may possibly be observed by merely inspecting the preparation with a glass.

1st. If the sulphate of quina be mixed with a considerable proportion of foreign matter, it may probably be detected by dissolving the salt in question in about three hundred times its weight of water,—say one grain in about five fluid drams of boiling distilled water. On cooling, pure sulphate of quina will be deposited in feathery crystals in twenty-four hours, if there be no adulteration.

2dly. As indirect, but as good collateral evidence, the taste of sulphate of quina of known good quality may be compared with that of another sample. Thus, when pure, a grain of sulphate of quina will render nearly a pound and a half of water, or 10,500 grains, sensibly bitter.

3rdly. The alkalies, either pure or their carbonates, if but slightly in excess, always occasion precipitation at ordinary temperatures in a solution of sulphate of quina containing only 1-1000th of its weight, or less than one grain in two fluid ounces of water.

4thly. A solution of tannin occasions a very sensible precipitate in an aqueous solution of sulphate of quina, containing only 1-10,000th of its weight of the salt, provided there be no acid in excess. Kino is that form of tannin which best answers the purpose. It is however to be observed, that the salts of morphia, cinchonia, strychnia, &c. are similarly affected by tannin; but they are not likely to be mixed with sulphate of quina.

5thly. Sulphate of quina suspected to contain sugar, gum, or other substances soluble in cold water, may be tried by digesting the same portion of the salt in small and successive portions of water to saturation. If the sulphate of quina be pure, and the solutions all properly saturated, they will have the same taste and specific gravity; and similar portions will yield, by evaporation, equal quantities of solid residuum.

6thly. A repetition of the above process, substituting alcohol for water, answers for extracting resin and some other substances, because sulphate of quina is soluble in alcohol to only a limited extent.

7thly. If a white substance insoluble in cold water be found in the sulphate of quina, heat the mixture to about 170° of Fahrenheit. This will render starch soluble, and its presence may be determined by the addition of an aqueous solution of iodine, which will immediately occasion a blue colour, and eventually a blue precipitate. The iodine should be added in very small quantity.

8thly. Sulphate of quina has been adulterated with ammoniacal salts. These are rendered obvious by adding a little of the suspected salt to a solution of potash. If any ammoniacal salt be present, ammoniacal gas will be readily detected, either by the smell, or by holding over the mixture a piece of turmeric paper, or a bit of glass moistened with acetic acid.

9thly. To ascertain whether sulphate of quina contains any earthy salts, such as sulphate of magnesia or sulphate of lime; burn a portion of it in a silver or platina crucible, or even in a clean tobacco-pipe. Any earthy salt, or any matter indestructible by heat, will of course remain in the vessel.

10thly. To ascertain that the sulphate of quina contains the proper quantity of sulphuric acid and quina, dissolve a little in pure muriatic or nitric acid, and add a solution of muriate or nitrate of barytes: 60 parts should give about 17.3 to 17.4 of sulphate of barytes; or the method may be varied without the trouble of drying the precipitate. Dissolve 60 grains of sulphate of quina in water slightly acidulated with muriatic or nitric acid; add a solution of 18 grains of nitrate of barytes, and separate the precipitated sulphate of barytes by filtering. If nitrate of barytes be now added to the clear solution, it should still occasion slight precipitation, for 60 of sulphate of quina contain 5.8 gr. of sulphuric acid, equivalent to 19.1 of nitrate of barytes.

This test is only to determine that there is no crystallised vegetable matter uncombined with sulphuric acid in the sulphate of quina; the detection of earthy or alkaline sulphates has already been provided for.

11thly. Sulphate of quina should lose not more than from 8 to 10 per cent. of water by being heated till deprived of its water of crystallisation. Mr. Barry informs me that he once examined a sample which contained more than 40 per cent. of water, in excess, diffused through it."

With respect to the comparative purity of the French and English sulphate of quinine,

speaking generally, we cannot state anything decisive; the samples of each, which have been forwarded to us for the purpose of examination, we find to be perfectly pure. The most common mode of sophisticating this medicine, we believe, is by the admixture of sulphate of magnesia, or some ammoniacal salt, which are substances readily detected: the presence of any extraneous vegetable matter, we apprehend, is with difficulty ascertained. It seems, that there is now a competition between the English and French manufacturer of quinine; the latter having enjoyed, until lately, the almost entire monopoly of the article. With every feeling of patriotism, and good wishes towards the English manufacturer, we cannot avoid expressing our doubt that he will be undersold by the French, owing to the cheap rate at which the latter obtains his materials. The cinchona and rectified spirit are purchased in France, if we are informed correctly, at less than half the price paid in England: three pounds of bark will yield one ounce of sulphate of quinine; and if the price of bark, in France, should amount even to three shillings and sixpence per pound, the salt will cost, in its manufacture, thirteen shillings and sixpence per ounce. To this must be added, the expense of bottles, carriage, and agency for its sale; yet, notwithstanding all these, the French manufacturer can afford the article at a lower rate than it can be made at in this country, as may be clearly shown by estimating the price which the cinchona and spirit of wine bear in England.

The two principal manufacturers of quinine in France, are Marchand and Delone; the former, in conjunction with Caventon, and the latter with Pelletier, both of whom, it will be remembered, the Academy honoured with a reward for the discovery of the medicine.

ON DIABETES MELLITUS.

BY DR. AYRE.

To the Editor of THE LANCET.

SIR,—I observe, in your publication of the 23d instant, a report is made of the discussion which took place at the Westminster Medical Society on the previous Saturday, and that, in that report, a gentleman is represented as being at issue with me upon some points connected with the case which I detailed to the meeting. The ink of your publication, however, was scarcely dry, when that gentleman very handsomely gave at the next meeting an apologetic explanation of the part which he had taken in the discussion, and which was not more honourable to him, than satisfactory and acceptable to me; and had the rules of the Society permitted me to add my own to his explanation, and a report of them both been published in your journal, my further concern about the matter might have been spared. As the point, however, stands, the interests of truth, and the claims of fair discussion, require of me a more detailed exposition of the facts than were given in your work, as serving to elucidate the pathology of the disease of diabetes mellitus, and as explanatory of the means successfully pursued by me in its treatment. I shall now, therefore, relate the history of my patient's disorder, as given in an account drawn up by himself, and delivered to me, with the fullest permission to publish it. To this account I annex a diary kept likewise by himself during twenty-four days, with observations on the changes and progressive improvements which took place in his disease, carrying the account, as it will be seen, up to the 7th of January, when I considered him, and he considered and reported himself, as nearly, if not entirely, well. The following is the account which he gave:—

"About the 4th or 5th of May 1827, I arrived in Ireland to rejoin my regiment, from leave of absence spent in England, and, with the exception of having walked about London a good deal the day previous to my departure for Ireland, I cannot recollect having used any great bodily exertions sufficient to cause indisposition. However, on my arrival in Ireland at the town of Mullingar, I experienced an unnatural thirst, and, contrary to my habits, frequent evacuations, during the night particularly, when I used to arise from bed three or four times for that purpose. I did not then take particular notice of the quantities I either ate or drank, but from recollection, imagine I must have drank upon an average 12 or 14 pints per day of cider, buttermilk, soda water, &c.

My appetite used likewise to be rather voracious. I attributed my thirst to want of exercise, and, in consequence, used to take very long walks and rides, notwithstanding which, and my utmost struggles to prevent it, I felt considerable languor and weakness, accompanied with restlessness and great nervousness. About the 24th of June I went to the lakes of Killarney for a fortnight; and both on my journey there and back, as well as during my stay, my thirst increased dreadfully. I have frequently had to stop the coach and to call for water, milk, or any fluid I could get, by the road; and, when on the lakes, I always had a glass, and used to drink large quantities of lake water. My thirst even increased in August and September, and two or three times I recollect having measured the quantity which I drank, and it amounted to 24, 26, and 28 pints, and I evacuated as much as 32 or 34 pints, when, the greatest evacuation taking place at night, I used to sleep very little, being annoyed likewise by cramps in the calves of my legs, and swellings of the veins both of the calves, ancles, and insteps. My mouth used to become so intolerably parched, that for longer than five minutes I could not abstain from drink; nor would small quantities of fluid suffice; for when I raised a vessel to my mouth for the purpose of drinking, a sort of phrenzied eagerness hindered me from ceasing, until I had exhausted all the fluid in the vessel, amounting sometimes to three pints at a draught. In this state I continued until about the 6th of November, my thirst having in that period abated only in a very trifling degree. The medical gentleman whom I consulted in Ireland, either attributed my disease to an affection of the liver, or a disordered stomach. On the 6th of November, 1827, I had the good fortune to consult Dr. Ayre, of Somerset Street, Portman-square, and, in compliance with his wishes, kept the following diary, which will show the quantities I ate and drank and evacuated, as well as the number of hours which I slept; the dates of cupping, as well as my weight, &c. I must add, that my weakness on my return to London was such, that I could scarcely walk half a mile without experiencing extreme exhaustion, and my flesh had fallen away to that degree, that my carcass appeared nearly like that of a skeleton. I used frequently to feel exceedingly giddy, and my gums were in the habit of bleeding and detaching themselves from the teeth. The thirst had, in some measure, abated before I reached London, and my appetite very much. The quantity I eat is put down in ounces, and the quantity drank and evacuated, in pints."

Such were the symptoms of my patient, as detailed above. In proceeding to the treatment, I acted upon the view which I have long entertained concerning the nature of this disease, and which is, that there exists an exaltation of the vital action of the secretory vessels of the kidneys, analogous to inflammation in other structures, and occasioning the saccharine condition of the urine, the absence of urea and the other component parts of that secretion, as found in its healthy state; whilst the inordinate appetite and thirst are but secondary effects resulting from the sympathy subsisting between the kidneys and stomach, and, probably, from the waste of fluids, and of the nutritive principles of the blood, which the thirst and appetite, by their indulgence, are meant to repair. The dryness and unperspirable state of the skin, the clamminess of the mouth and fauces, and the costiveness of the bowels, are explicable on that well known law on the animal economy, that inordinate secretion in one tissue, occasions a correspondent diminution of it in others; whilst the nervousness, the vertigo, the imperfection of vision, the muscular debility, and the other symptoms of general atrophy, are attributable to the daily loss sustained by the system, from the abstraction of the nutritive principles of the blood. Nor are these views, which are those, indeed, now generally entertained by the pathologists of the continent, invalidated by the fact, that traces of disease are sometimes not found in the kidneys of patients who have laboured for some time under diabetes, but who die of pulmonary or other affections superinduced upon it, for in these cases the diabetes has been a remote cause of those diseases which supervened upon it, and which has itself yielded to this secondary affection, affording an example of what has been termed the conversion of disease. Considering, therefore, that the proximate cause of the disease consisted in an increased action of the secretory vessels of the kidneys, it appeared to me proper to attempt to subdue that increased action, as a principal indication of cure; and to abstract blood from the loins by cupping, as best calculated to fulfil that indication. I was not unaware of the partial benefit which has been found to arise from the use of animal diet in this disease, and which has, undoubtedly, been useful, as affording principles least stimulant to the kidneys; but I was anxious to determine the full power of the treatment by cupping, which I was about to adopt; and that my conclusions respecting that power might not be disturbed by any doubts, produced by a blending of various means together, I therefore directed the patient's diet to consist of the ordinary proportions of animal and vegetable food, with an abstinence from fermented liquors and acescent fruits, giving him no more medicine than ten grains of

the compound powder of ipecacuanha nightly, with castor oil when necessary. Having ascertained the existence of saccharine matter in the urine, by producing a copious fermentation, by the addition to it of a tea-spoon full of yeast, I directed him to lose fourteen ounces of blood by cupping from the loins, and to keep a diary of the quantity of food eaten, and of the fluid drunk and evacuated. The following is a verbatim copy of it :—

Days.	Eat.	Drank.	Evacuated.	Slept	
	Ozs.	Pints.	Pints.	Hours.	
1	12	12	17	7	Took two pills.
2	12	7	8	9	Lost 13 ounces of blood by cupping; weighed eight stone ten pounds before cupping.
3	14	5½	6½	5	
4	15	5½	6	8	
5	17	5	6	8	Lost 16 ounces of blood by cupping.
6	24	4½	5½	9	
7	21	4½	5	—	
8	23	5	4½	—	
9	23½	4½	4½	—	
10	22	4	4	- -	Up to this period have slept on an average eight or nine hours. The cramps have quite left me, and I never rise in the night.
11	25	4	3½	—	
12	20½	3½	3½	—	
13	26	4	4	—	
14	25	3½	3½	- -	Discontinued my pills.
15	24	3½	3½	- -	Lost eight ounces of blood by cupping.
16	23	3½	3	- -	Weighed, gained 3½ pounds, allowing for blood lost.
17	24	4	3½	- -	During this period my gums ceased bleeding, and my sleep became uninterrupted.
18	22	4	3½		
19	24	3½	4		
20	23	4	4		
21	25	4	3½		
22	24	3½	3½		
23	22	4	4		
24	23	4	4	- -	This day I weighed 8 st. 10½ lbs., and, although I feel a slight thirst after my meals, yet it is not inconvenient, and my strength is much improved.

To the foregoing diary and observations of my patient, I have to add, that a striking improvement immediately ensued, and was maintained after each cupping, particularly in his feelings, as he felt, after each operation, more and more relieved from that oppression upon the spirits, and that semi-beclouded state of the intellectual faculties, which are so characteristic of this disease. From the time when this diary closes, there was the same progressive advancement towards full recovery; he took his ordinary exercise, mixing freely in society, and partaking of its amusements. Between this time and the 7th of January, he was cupped twice, and, at the latter period, he delivered to me the following report :—

Since the 12th of December, I have been gradually gaining strength, my sight having quite recovered, and very slight inclination left towards thirst. From about the 24th of December, I observed my urine to become much darker than it has been for many months, and that it deposits a dark brown sediment. A flatulence, to which I have been subject for some time, with scarcely any offensive smell, has latterly been accompanied with a strong fœtor. On weighing, on the 5th of January, I found my weight increased half a pound since I was last weighed.*

Up to this period the patient had been under my sole care, and had followed, with

* I received a communication from my patient, as late as the 14th of January, in which he assured me, that "he had nothing but favourable symptoms to report of;" and he favoured me with a visit on his late temporary return to town, when I learnt that he was gradually increasing in weight, and considered himself to be well.

tolerable strictness, the whole of my instructions. Indeed, I had considered, that for some time previous to this, little more was wanted than the common caution, of avoiding the ordinary causes of disease, to complete and secure his entire recovery. I apprised him, however, of the tendency there was to relapse, and of the propriety there would be in recurring to occasional cupping, as preventive, or corrective, means. That his cure, however, was nearly, if not fully, completed, is shown by the report made, from time to time, by the patient, and as evidenced by the gradual improvement in all his symptoms; by the rapid diminution of his thirst, and change in the quantity and quality of his urine; by the healthy and perspirable state of his skin, the cessation of the cramps, the firmness of his teeth and gums, the rapid increase of strength, notwithstanding the loss of blood, and the nearly entire restoration of healthful spirits; and that these improved changes, so rapidly produced, were attributable to the cupping alone, may be safely assumed; for nothing but the cupping, of any importance, was employed; and if, for the sake of arguing the point, it be admitted that the patient was recovering, but not recovered by these means, it surely must be conceded, and ought, *a fortiori*, to be believed, that a method of treatment so direct, and so little exposed to misconception, as to its mode of operation, should be able to remove any remaining traces of the disease, since it had proved efficient for the removal of symptoms most characteristic of it. I have already stated, that I abstained from the use of an exclusive animal diet, being satisfied that it was not necessary, and being anxious, at the same time, to strengthen, by this important fact, the views I entertained of its pathology. Indeed, it was from the desire to establish this important principle, that I instituted, for ten days, the trial of an exclusive vegetable diet, and had the satisfaction to find, that no injurious effect was produced by it. Yet, notwithstanding these very obvious, and very conclusive, facts, it was contended for by the gentleman to whom my patient was introduced, a few days before leaving town, that the animal diet which he advised him to use, has been the cause of his subsequent improvement in strength and health; and, even in spite of the further embarrassing fact, that the patient continued to follow the advice I gave him, and has twice been cupped, at his own suggestion, since he parted from me. To conclude; upon the whole, therefore, and after the most dispassionate consideration given to the case, and to the treatment pursued in it, we can deduce, I conceive, no other conclusion than that:

1st. The disease of diabetes mellitus consists in a morbid excitement of the kidneys, producing, as in analogous cases of excitement in other organs, a depraved or morbid secretion, and which, in that of the kidneys, occasions saccharine matter to be produced in place of those various matters, which are found to constitute healthy urine.

2nd. That the irritation in the kidneys acts sympathetically upon the stomach, and produces the inordinate thirst and appetite, assisted, it is probable, by the demand for supply, which is made upon the system, by that waste of fluid and nutritive principles, which are perpetually passing out of the body by the kidneys.

3rd. That the unperspirable state of the skin, the clammy mouth and fauces, and costive bowels, are the consequences of an inordinate secretion in another tissue; that the debility and other symptoms of atrophy are the effects of the abstraction of the nutritive principles of the blood; and that the disease of diabetes mellitus, is, in its effects upon the system, analogous to other diseases, which occasion, or consist in the withholding or withdrawing of the same principles from the blood, as in excessive or long-protracted lactation, certain states of dropsy, &c.

4th. That the method of treatment suited to remove this disease, must be that which reduces the increased action of the secretory vessels of the kidneys to their natural state; and as the morbid action is of a chronic kind, and purely local, so local is preferable to general depletion: and the exclusive use of an animal diet is not necessary, although a liberal use of it may be proper, as, by being less acescent, it may occasion a less determination of blood to the kidneys, whilst all acescent fruits and fermented liquors, are, in a corresponding degree, improper.

I have the honour to be, Sir,
Your obedient humble Servant,
JOSEPH AYRE.

Somerset-street, Portman-square,
February 29.

ROLFE v. STANLEY.

To the Editor of THE LANCET.

SIR,—Having read in Longman's Medical Journal, some very silly allusions relating to this cause, I beg to inform you that the plaintiff is equally dissatisfied with the verdict; and I am desired to say, that a motion for a NEW TRIAL *will not be opposed* upon payment of costs.

I am, Sir,
Your obedient servant,
GEO. VINCENT.

Clifford's Inn, 26 Feb. 1828.

ST. BARTHOLOMEW'S HOSPITAL.

SYPHILITIC IRITIS OF BOTH EYES, WITH PAPULAR ERUPTIONS ON THE LEGS AND BODY.

J. Grant, a small man, of fair complexion, aged 28, was admitted into Henry's Ward, on the 20th October, under the care of Mr. Lawrence. He states that six months ago he had a sore on the inside of the prepuce, for which he took pills which affected his mouth, and in three weeks the ulcer was quite healed. Three months subsequently, he was attacked with pains in his bones, which were severe at night; and in two or three weeks the limbs and body were covered with small pimples, having, as the patient describes, watery heads; the pimples on the legs broke, and formed *blotches*. Eight days ago, the vision of the *right* eye became impaired; and in a day or two he had considerable pain in the eye-ball (more particularly at night,) intolerance of light and lachrymation; and in a few days the left became similarly affected. Small numbers of leeches (five or six) have, at different times, been applied to the eyes, and two days ago he was bled from the arm; these measures, however, have afforded but temporary relief.

October 20. The right eye is highly inflamed; the vessels of the conjunctiva are highly injected, and there is chemosis of its lower half, covering the sclerotic; there is a red zone of vessels around the cornea. The cornea is hazy; the iris is dull, and of a greenish colour; the inner circle more brown than that of the opposite eye, and at its upper and outer part is a yellowish tubercle the size of a small pea; the iris around its base is of a brownish tint, and there are adhesions in this situation to the capsule of the crystalline; the pupil is contracted and immoveable; there is increased sensibility and pain on exposure to light, with copious discharge of tears. Vision is so much impaired that he can scarcely distinguish light from darkness. In the left eye the inflammation is less severe; there is no effusion of lymph in tubercles, but the iris has lost its natural clearness, and there are adhesions at its upper and nasal side; the cornea is dull, and around it is a distinct zone of red vessels; intolerance of light and lachrymation less severe than in the right eye. Last night he suffered great pain in the *eye-balls*, more particularly the right; pulse full, hard and frequent; complains of pain in the head; tongue coated. There are numerous copper-coloured blotches in a state of desquamation on the legs, and several papulæ on the body. V. S. ad ℥xxiv. His bowels having been operated on by a dose of calomel and jalap; he was ordered to take the following pill every eight hours: — ℞. Hyd. submuriat. gr. iii.; pul. opii, gr. ½; M. ft. pil. The extract of belladonna to be applied to the brows at night. In the evening his pulse was hard and incompressible, and he complained of great pain in the right eye-ball; he was again bled to ℥xviii., and 12 leeches were applied to each temple.

22. The pain in the right eye is much diminished; the pupil is largely dilated by the belladonna; at its upper and outer side are adhesions to the crystalline capsule; the inner circle of the iris is less brown; the tubercle of lymph somewhat diminished; the cornea is less hazy, and there is less inflammation of the conjunctiva. The appearance of the left eye is equally improved; there are slight adhesions at its upper and nasal side. Continue the pills and the belladonna.

24. Conjunctival inflammation and the red zone of vessels round the cornea of the right eye, considerably diminished; cornea, clear; iris still adherent at its upper and outer side; inner circle has lost its brown tint; tubercle of lymph much diminished; vision much improved. The left eye has nearly regained its natural appearance, with the exception of the adhesions of the iris; no pain in the eyes at night; mouth is much affected by the mercury. Omit the pills; continue the belladonna.

27. The vision of the right eye is much improved; the tubercle of lymph is nearly absorbed; the adhesions are separating; the eruptions on the legs and body are fast disappearing. Ptyalism severe; continue the belladonna.

November 1. Feels himself quite well, except that the mouth and gums are very sore from the mercury. The irides are quite restored to their natural colour, and vision is perfect. The right pupil is still adherent at its upper and outer side; the adhesions, which are slight, are of a dark brown colour; on the capsule at its lower part, and corresponding to the pupillary edge of the iris, is observed a string of dark coloured spots; and on the lower half of the cornea are seen numerous minute specks which appear to be seated on its internal surface. A slight adhesion still remains in the left eye; two or three brown spots are seen on the capsule; and the internal surface of the cornea presents an appearance similar to that which is observed in the right eye.

ARTHRITIC IRITIS.

Thomas Biggs, ætat. 34, a journeyman baker, was admitted into Henry's Ward,

Jan. 30, 1828, under the care of Mr. Lawrence. A fortnight ago the left eye became dim, and was followed in a few days by redness and pain in the ball, which was more severe at night. He continued his usual occupation; and allowed the affection to proceed uncontrolled, until from his being constantly exposed to the heat and vivid light of the oven, the eye had become so acutely painful as necessarily obliged him to leave off work. When admitted into the Hospital, the vessels of the conjunctiva and sclerotic (in the left eye) were highly congested, and the pink colour of the latter, which formed a broad zone round the cornea, was strongly contrasted with the crimson colour of the conjunctiva; the iris, instead of presenting its natural blue, was of a greenish colour, dull, and its pupillary margin appeared thickened. The pupil was contracted and fixed. Vision was so imperfect that he could scarcely distinguish light from darkness. He suffered great pain in the eye-ball and left side of the head, more particularly at night; the pulse was frequent and hard; tongue coated; skin hot. He has been subject to rheumatism, and has had repeated attacks of inflammation in both eyes. The vision of the right eye was tolerably perfect; but there were some brown-coloured adhesions of the iris to the capsule of the crystalline. Eighteen leeches to the left temple; four grains of calomel, and twelve of jalap, immediately. Saline mixture, with drachm doses of liq. antim., and sulphate of magnesia, every six hours. The softened extract of belladonna to be applied over each brow, night and morning.

31. Eighteen leeches repeated. The pupil was largely dilated by the belladonna; it was of a very irregular shape, and the adhesions, which were of a brown colour, and of a triangular form, were seen proceeding obliquely from the pupillary margin of the iris to the capsule of the crystalline.

February 1. Eighteen leeches repeated. Continue the mixture, and the application of the belladonna.

3. The distention of the conjunctival and sclerotic vessels was much diminished; the pink colour of the latter was confined to a narrow zone round the cornea; the iris was more clear, and vision much improved. The pain in the eye-ball and head was considerably less; and his tongue natural. Continue the mixture.

6. Yesterday he had slight increase of pain in the head and eye; he was cupped to 12 oz. from the nape of the neck; the redness of the sclerotic was nearly gone; the iris was clear, and had almost lost its green tint; vision was considerably improved; and the pain in the head and eye-ball had left him. There were a few dark coloured adhesions still remaining in the left eye; slight adhesion of the right iris, and on the capsule was observed a circle of brown depositions. Continue the mixture twice a day; and repeat the application of the belladonna.

12. The iris has regained its natural transparency and colour; vision was restored, and he could read a small print. There were a few slight adhesions still remaining. Omit the mixture, and take five grains of the Plummer's pill every night.

17. With the exception of two or three minute adhesions the eye was quite restored to its healthy state, and vision was perfect; he was desirous to leave the Hospital; but Mr. Lawrence advised him to remain a few days longer, and to avoid too early an use of the organ.

ST. THOMAS'S HOSPITAL.

CASE OF GONORRHŒAL OPHTHALMIA.

The following case (still in the Hospital,) presents a striking example of the rapidly destructive progress of inflammation in the eye, produced by the application of gonorrhœal matter:—

The patient, a stout young man, came into the Hospital on the 17th of December, and was put under the care of Mr. Tyrrell, the account which he gave was, that eight days previously, being at play with a companion, some urine was thrown upon him, part of which entered his right eye. The person who had passed the urine was affected with gonorrhœa. In the course of five minutes, the eye, after smarting very much, became hot and red, and on the same evening, (not more than four hours afterwards,) the eyelids were greatly swollen, and purulent matter was discharged from between them. On the ensuing morning, the left eye was similarly affected with the right, although there had been no application of gonorrhœal matter to it, as far as the patient could ascertain. He remarked, however, that after the right eye was affected with purulent discharge, he incautiously rubbed the opposite eye with the hand employed in wiping away the matter.

The only means of relief which the patient sought, was by application to a druggist, who recommended poppy fomentation and blisters to the temples, which measures were complied with. When admitted, the violence of the disease had in some measure spent itself; the right cornea was sloughy to a considerable extent, and the left partially so. There was excessive chemosis, both of the palpebral and ocular conjunctiva, and intense redness. Blood-letting, *ad deliquium*, was immediately had recourse to, and

repeated in the evening. A brisk purgative of colocynth and calomel was administered, and the poppy fomentation, with alum, used as a local application. The inflammation was subdued under this treatment: the further sloughing of the cornea checked; the part already gangrenous separated, leaving the greater portion of each cornea in an opaque and spoiled condition. Five days after admission, the proportion of alum was increased in the fomentation, and two days afterwards, leeches were applied; these constituted the principal means employed until the 7th of January, when the use of a solution of lunar caustic was resorted to, in the proportion of two grains of the salt to an ounce of water,

This remedy was continued until the 20th of February, the date at which this report was concluded, when the condition of the eyes was given as follows:—In the right, there is evidently a destruction of the inner and upper third of the cornea, the breach being occupied with a black substance—the iris; the cornea to some extent around is opaque, the lower part of this membrane tolerably clear. The power of vision in this eye only amounts to the bare perception of objects. In the left eye the cornea has become flattened, and there is a dense opacity situated obliquely over the centre of vision: on the side of the inner edge of the pupil, the cornea is partially destroyed, the space being filled by points of the iris, which is adherent to some extent. The power of vision in this eye is somewhat greater than in the opposite.

The only operations performed at this Hospital for some time past, are amputation of the thigh, in consequence of scrofulous disease of the knee-joint, by Mr. Green, and amputation of the thigh, in a case of non-union of the femur,* &c. The lateral flap operation (with a slight modification) was adopted, and the patient to the present time, (Feb. 28,) is going on well.

HOSPITAL OF SURGERY,

Panton Square, St. James's.

DISEASE OF THE PAROTID GLAND.

The following case is particularly worthy of notice, as it affords an excellent example of a disease affecting, apparently, the whole substance of the parotid gland; a case occurring so rarely, that those engaged even in extensive practice, have seldom seen it in a diseased state:—

A groom, 29 years of age, was sent to this Hospital by Mr. Noughton, of Kettering, on account of a very large tumour in the site of the parotid gland of the left side. The swelling fills up entirely the space between the internal ear, mastoid process, and ascending ramus of the lower jaw, and extends over the face as far as the first grinding tooth. It is of an incompressible and almost stony hardness, and adheres so firmly to the subjacent parts, as not to admit of the least motion. Its surface is irregular and knobbed, but the skin, which is of its natural colour, does not adhere to the tumour. The motion of the jaw is so limited, as not to admit of his front teeth being opened much beyond half an inch. The ramus of the jaw appears to be implicated in the disease, as it can be felt from the inside of the mouth very much enlarged. He occasionally suffers a good deal of pain from this tumour, but his general health is perfectly good. The account which he gives of the origin of the disease is, that sixteen years ago he received a blow from the lash of a whip under the lobe of the ear, and that soon afterwards a small immoveable tumour made its appearance on that part, and remained about the size of a hazel nut for several years. Five years ago it began to get painful, and to increase in size; and, within the last six months, its progress of enlargement has been very rapid.

This case affords, if one were wanting, an excellent proof of the impracticability of extirpating the whole of a diseased parotid gland, an operation which the late Mr. John Bell pretended to have accomplished. "Whoever has injected with mercury the salivary duct in situ," says the late Mr. Allan Burns, "and then, even where the gland was healthy, free from preternatural adhesions, and limited to its natural size, has tried to cut it out, would be convinced, when he saw the mercury running from innumerable pores, that the gland extends into recesses where he could not trace it in the living body. If this be true in health, what must it be in disease, where the parts are wedged between the angle of the jaw and the mastoid process, and nitched into every interstice around. On the dead subject I have attempted the extirpation of such tumours, but have never succeeded in clearing away fully the diseased substance. Those who assert that they have extirpated the parotid gland have, I am fully convinced, mistaken that little conglobate gland, which lies embedded in its substance, and which does sometimes enlarge, producing a tumour in many respects resembling a diseased parotid, in the parotid itself." If we may

* For a copious detail of this case, see the report of the London Medical Society in the present Number.

credit the assertion of Mr. Charles Bell, we must believe that his brother, assisted by himself, actually accomplished this impossibility. (See Burns's Surgical Anatomy of the Head and Neck, p. 293.)

CASE OF ENCYSTED TUMOUR IN THE NECK, REMOVED BY AN OPERATION.

An unmarried woman, in the 26th year of her age, has a tumour projecting from the anterior part of her neck, a little below the laryngeal cartilages. It is the size of a small apple, and its surface is rather irregular; it has a firm elastic feel, and is readily moveable upwards and downwards, as well as laterally; and the skin, which is of its natural colour, lies very loosely over it. There is one of the cervical glands, on each side of the neck, considerably enlarged, but these are at some distance from the tumour.

The history which the patient gives of this swelling, is not very distinct; but the facts seem to be, that about sixteen years ago, some of the cervical glands on both sides of the neck were very considerably swollen, and a few years afterwards she perceived the commencement of the present tumour, the bulk of which has since been gradually increasing, while the size of the swelled lymphatic glands has gradually diminished. Of late, the increase in the bulk of the tumour has been such, as to create, notwithstanding the use of a variety of internal, as well as external, remedies, great discomfort. She chiefly complains of difficulty in breathing, which is so much increased by the alteration of the position of the head and neck from the erect posture, that she is unable to follow her employment as a servant.

In this state Dr. Leman, whom she last consulted, advised her to have the tumour extirpated, for which purpose she was admitted into the Hospital. Mr. Wardrop solicited Mr. Lawrence's opinion, on the necessity of extirpating the tumour. Its removal by an operation was warrantable, as it did not appear to be one of those cases of diseased thyroid gland remediable by medical means, but was, probably, an encysted tumour lying in close contact, but not involving the structure of the middle lobe of that gland. This opinion was chiefly founded on the great mobility of the tumour on the trachea. Had it been a swelling of the middle lobe of the thyroid, no such mobility would have existed; for, even in the natural state, that portion of the gland encircles and lies in close apposition with the anterior part of the windpipe. When it becomes enlarged, its contiguity with the trachea becomes still closer, the trachea is almost encircled by it; and hence, in such a case, the tumour, instead of being moveable and globular, has a flattened form, and appears to be immoveable, and adhering to the trachea.

Operation.

An incision, of the form of a T, was made through the integuments down to the capsule of the tumour. From the great looseness of the cellular membrane, the integuments were with facility dissected from the cyst, except at its posterior portion, where it was found to lie in such close contact with the isthmus of the thyroid gland, that Mr. Wardrop deemed it more prudent to remove a small portion of that gland along with the tumour, rather than endeavour to dissect the tumour from the gland. No vessel, of any consequence, was divided, until the gland was cut.

Mr. Lawrence now tied two arteries which bled profusely. On examining the tumour, and a small portion of the thyroid gland, which was removed with it, there did not appear any intermixture of their structures, but they were merely in contact; and so closely did they adhere, that had the operator attempted to dissect one from another, either the gland must have been wounded, or the cyst opened, as at this part its parietes were very thin.

On dividing the tumour, after its removal, it was found to consist of a firm capsule, from which passed off various partitions, forming cavities of different sizes. These were filled with a dark coffee-coloured fluid; and in one, which was of considerable size, pieces of hardened blood were intermixed with the fluid. Mr. Wardrop compared this tumour with one which he had removed some weeks before from the neck of a female immediately below the angle of the jaw, which tumour had not been divided until it had been put into spirits; and though rather larger in bulk, yet, in external characters, resembled the tumour which had been removed from the present patient.

The resemblance of the internal structure was also very remarkable; the colour of the fluid contained in its cells, was changed by the immersion in the spirits; but the cellular structure itself, and the cyst itself, being hardened by the spirits, retained their form. A small portion of the lower lobule of the parotid gland had been removed along with the tumour in this case, from the circumstance of its being in close contact with the cyst, in like manner as the thyroid gland was found in the present patient in contact with the tumour, which circumstance illustrates the important pathological fact, that, in the one instance, the parotid gland had no share in the disease, nor the thyroid gland in the other, as it is scarcely possible to conceive that two en-

cysted tumours, so precisely resembling each other, in external and internal characters, should be formed in glands differing so much in their structure, as their parotid and thyroid.

In consequence of the lips of the wound having been kept together with ligatures, blood was effused in the very loose cellular tissue, so as, in an hour after the operation, to distend the skin, and form a swelling as big as the original tumour. The ligatures were therefore cut out, the wound cleared from clotted blood, which was found to proceed from several small vessels on the divided surface of the gland; the bleeding was arrested by the introduction of a piece of sponge, on which moderate pressure was, for some time, applied. Two grains of opium, with six of calomel, were now exhibited, and the patient had an excellent night, and no febrile symptoms supervened. The wound, instead of adhering, has, consequently, undergone a process of suppuration, and the sponge was removed on the second day. The portion of cellular membrane, into which the blood was effused, has sloughed.

CASE OF DISEASE OF ONE OF THE LOBULES OF THE PAROTID.

The following case exemplifies an interesting pathological fact regarding the parotid gland, which is, that, like the mammary, and other conglomerate glands, only one of the lobuli may be diseased. It is well ascertained, that in the female breast, during lactation, it not unfrequently happens, one of the lobuli of that gland becomes swelled; the swelling being produced in consequence of the retention of the milk which it has secreted. In the following case the affection of the parotid appears analogous.

A female, 45 years of age, applied on account of a tumour about the bulk of a hazel nut, situated on the cheek, a little anterior to and below the ear, which tumour had formed suddenly, on the morning of the same day, and which, she stated, would in the course of a few hours as quickly subside. For some years past similar swellings have formed and disappeared in like manner, and when they have subsided she has always perceived the sudden escape of a watery fluid into the mouth. Mr. Wardrop has met with an analogous case, in which the swelling of one of the lobuli of the parotid comes on suddenly, from particular substances taken into the mouth, and where the swelling subsides by a discharge of saliva, and has, on some occasions, been followed by a good deal of inflammation.

GUY'S HOSPITAL.

WARTY CANCEROUS TUMOUR ON THE BACK OF THE THIGH.—OPERATION BY MR. MORGAN.

——, ætat. 58, a man of unhealthy appearance, was admitted into Job's Ward, under the care of Mr. Morgan, on account of disease of the upper and back part of the left thigh. He stated, on admission, that his general health, until within the few preceding months, had been tolerably good; he had, however, been subject to glandular swellings and blotches on the skin, which he attributed to scrofula, the disease being, as he considered, inherited from his mother. A large blotch had existed on the back part of the thigh for many years, covered more or less with scales of dry cuticle, and productive of no pain or inconvenience, until, at length, a scab formed; this eventually separated, when an ulcer was left, which gradually went on spreading. The patient further said, that he had suffered much mental anxiety, on account of pecuniary losses, which had reduced him below the means of obtaining many comforts to which he had been accustomed.

It was found, on examining the thigh, that there was a hard warty excrescence commencing immediately below the left nates, and reaching to a considerable distance down the limb, being of the size of a large orange flattened. There was scirrhous hardness in the surrounding integuments, and discolouration of the skin at the part immediately above the tumour: the mass consisted of hard warty granulations, and in the centre was an opening, equal in size to the top of the little finger, and discharging freely an ill-conditioned and offensive matter. The part itself was not painful, but lancinating pains were occasionally felt down the thighs and leg.

Mr. Morgan having expressed his opinion that the disease was of a malignant nature, proposed an operation for its removal, to which the man assented, and it was accordingly performed on Tuesday, the 18th of February. The operation consisted of making an incision through the integuments, round the swelling, and then fairly dissecting the tumour out: it was found to be firmly connected to the fascia, and it was deemed advisable to cut away a portion of muscle.

CASE OF SCIRRHOUS TUMOUR, AT THE UPPER PART OF THE PUDENDUM.

The subjoined case, still remaining in the Hospital, may be considered interesting in conjunction with the preceding, as tending

to confirm the opinion, that cancer attacks the various textures of the body almost indiscriminately, its ravages not being confined to glandular parts alone.

M. M., æt. 47, a woman of sallow complexion, was admitted into Martha's Ward on the 17th of November, under the care of Mr. B. Cooper. She has borne nine children, and her menses ceased a short time previously to coming into the Hospital; family circumstances have distressed her mind greatly within the last two years. The disease consists of a very firm irregular tumour, of the size of a double fist, situated at the lower part of the abdomen, occupying the mons veneris, and extending some distance into each labium; it is of "stony hardness," and is firmly attached to the parts beneath. The skin covering the swelling, is of a purple or livid colour, and there are numerous small openings, from which a sanious, and, in some instances, a milky fluid, is discharged. There is no glandular enlargement to be distinctly ascertained in either groin, but pressure at this part, and to some distance up the abdomen, occasions much pain, leading to the impression, that the deep-seated glands are implicated. Lancinating pains are frequently felt in the tumour, and they extend to the loins.

The account which the patient gives of the origin of the disease is, that about twelve months prior to admission, she discovered, by accident, a hard tumour of about the size of a nut, in the upper part of the right labium; it remained stationary for five months, occasioning no pain, when it began to enlarge, became painful, and continued to increase to the date of application at the hospital. A *surgeon* made an opening into the swelling with a lancet, and a small quantity of blood flowed from the orifice.

Since the patient's admission, the disease has certainly become much aggravated. It was decided at first, that owing to the connexion which the tumour had formed with the surrounding parts, an operation for its removal was inadmissible. Palliative means alone have been employed, and the woman continues, at present, in Martha's Ward.

OPERATIONS.

In addition to the removal of the cancerous tumour, in the case related above, Mr. Morgan performed the operation of castration on the 19th, in consequence of lipoma of the testicle; and Mr. Bransby Cooper amputated a leg on the same day, under peculiar, and rather *ludicrous*, circumstances.

ST. GEORGE'S HOSPITAL.

On Thursday last, Mr. Brodie "*did* the operation"* of tying the external iliac artery, in a case of aneurism of the upper part of the femoral artery. The patient is a middle aged man; and the tumour, which was of the size of a goose's egg, had been perceptible about four months; an oblique incision was made, in the manner recommended by Mr. Abernethy, and one ligature was passed round the vessel. The pulsation of the swelling was instantly checked on tying the artery, and also pain of the limb, which had previously formed a prominent feature of the case.

MR. GILL OF LIVERPOOL—EXHUMATION OF BODIES.

On Friday, Feb. 8, the trial of Mr. Gill came on at the quarter-sessions at Liverpool, the Rev. J. Brooks, chairman. Mr. Gill, together with a person named John Stewart, was arraigned on an indictment, which charged them with having raised and carried off the body of a young female, from Walton church-yard. Stewart was acquitted, no evidence being adduced that he was the person who stole the body; but Mr. Gill was found guilty of having it in his possession, on the day after the exhumation took place, and fined thirty pounds. Small as the fine may be considered by some, and indicative, as it may be regarded, of the improved state of public feeling on the subject of dissection, we cannot but lament that the Court, with the member of a liberal profession at its head, should not have looked even with more lenient eyes on the situation of a highly respectable professional gentleman, and have shown that, under the existing state of things, the mode which the defendant had taken to prosecute

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* Such is the "eminent" surgeon's phraseology—or take the following as an example, from a lecture recently delivered: "Gentlemen,—A man came to my house, *making water in a small stream.*"

the study of anatomy, was the only one he could adopt.

In Mr. Gill's case, where no evidence was adduced that he had exhumed the body, or even been concerned in its exhumation, the Court might have allowed him to escape unfined. In this city, it not unfrequently happens that bodies actually in the progress of dissection are claimed; but the teachers in whose possession they are found, are not dragged before the public, and exposed to the inconvenience and annoyance of a prosecution; the body is given to the claimant, if a right in it be shown; after which, the Magistrates feel very reluctant to press the matter further. The Magistrates of Liverpool would have shown their regard for science and professional character, if, on this occasion, they had imitated the example of London Magistrates.

Mr. Gill's address to the Jury contains some sensible observations on the importance of anatomy, the force of which will, we trust, be felt and appreciated by the inhabitants of Liverpool, who are deeply interested, as is every other portion of the public, in the diffusion of efficient professional knowledge.

DIVINE MODE OF CREATING M.D.'s.

The Most Reverend Father in God, the Archbishop of Canterbury, has been pleased to confer the honourable title of M. D. on Charles Clarke, Accoucheur and Bat. This distinguished personage is now denominated by the ladies, the Divine Doctor.

Mr. R. Phillips, Lecturer on Chemistry at Mr. Grainger's theatre in the Borough, recently delivered his farewell address to the pupils, on which occasion he was presented by Mr. Scrivin, in the name of the class, with a superb snuff box, as a mark of respect for the manner in which the duties of his department have been uniformly discharged. Mr. Phillips has been succeeded by Mr. J. T. Cooper, whose talents as a practical chemist and teacher, cannot fail to ensure for him that success which he so pre-eminently deserves.

FRAUDS BY HOSPITAL PATIENTS.

To the Editor of The Lancet.

Sir,—Knowing you to be an exposer of abuses, in any way connected with the medical profession, is the reason I trouble you with this communication.

The facility with which medicines can be obtained at the Hospitals, induces out-patients with ague, to continue attendance long after their health is established, that they may *retail* those medicines to others; this practice has been continued for some time, perverting the objects of charters, and infringing the rights of general practitioners.

Showing you the evil, and hoping a remedy will be found,

I am, Sir,
Your obliged servant,
C. P.

P. S. The decided effect, mild operation, and price of quinine, are also incentives to this fraud.

Dartford, Feb. 10th, 1823.

TO CORRESPONDENTS.

Communications have been received from Mr. Wilmott—Mr. Pendergast—Mr. Harmer—Dr. Forster—An Old Apothecary—A Member of the Westminster Medical Society—Mr. R. J. Culverwell—An Indignant Accoucheur—A General Practitioner—A Hater of Bats—Sawney Macleod—A Medical Student—Mr. Slight—Mr. Williams—Mr. J. I. Evans—Mr. Weiss—Juvenis.

The Letter of Mr. T. H. Smith is left at the office.

The substance of Mr. James's Letter was inserted in our last Number.

"Constant Reader" has our thanks.